ABSTRACT

Title of Dissertation: BATTLE OF THE BRAINS: ELECTION-NIGHT
                            FORECASTING AT THE DAWN OF THE COMPUTER
                            AGE

                            Ira Chinoy, Doctor of Philosophy, 2010

Dissertation directed by: Professor Emeritus Maurine Beasley
                            Philip Merrill College of Journalism

        This dissertation examines journalists' early encounters with computers as tools

for news reporting, focusing on election-night forecasting in 1952. Although election

night 1952 is frequently mentioned in histories of computing and journalism as a quirky

but seminal episode, it has received little scholarly attention. This dissertation asks how

and why election night and the nascent field of television news became points of entry for

computers in news reporting.

        The dissertation argues that although computers were employed as pathbreaking

"electronic brains" on election night 1952, they were used in ways consistent with a long

tradition of election-night reporting. As central events in American culture, election

nights had long served to showcase both news reporting and new technology, whether

with 19th-century devices for displaying returns to waiting crowds or with 20th-century

experiments in delivering news by radio.

In 1952, key players – television news broadcasters, computer manufacturers, and critics – showed varied reactions to employing computers for election coverage. But this computer use in 1952 did not represent wholesale change. While live use of the new technology was a risk taken by broadcasters and computer makers in a quest for attention, the underlying methodology of forecasting from early returns did not represent a sharp break with pre-computer approaches. And while computers were touted in advance as key features of election-night broadcasts, the "electronic brains" did not replace "human brains" as primary sources of analysis on election night in 1952.

This case study chronicles the circumstances under which a new technology was employed by a relatively new form of the news media. On election night 1952, the computer was deployed not so much to revolutionize news reporting as to capture public attention. It functioned in line with existing values and practices of election-night journalism. In this important instance, therefore, the new technology's technical features were less a driving force for adoption than its usefulness as a wonder and as a symbol to enhance the prestige of its adopters. This suggests that a new technology's capacity to provide both technical and symbolic social utility can be key to its chances for adoption by the news media.

BATTLE OF THE BRAINS:
ELECTION-NIGHT FORECASTING
AT THE DAWN OF THE COMPUTER AGE

by

Ira Chinoy

Dissertation submitted to the Faculty of the Graduate School of the
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Advisory Committee:

      Professor Emeritus Maurine Beasley, Chair
      Professor Robert Friedel
      Associate Professor David Sicilia
      Professor W. Joseph Campbell, American University
      Associate Professor Mark Feldstein, George Washington University

"… I might start off of course by answering the question which everybody always asks anyway, and which gets asked more often by people who are not in the computer business – but it gets asked often and everywhere. That is something to the effect: did you ever think it was going to turn out like this? I'll admit my mother never told me, but my colleague Mr. Eckert and I, independently I think, have developed about the same answer: that, yes, we felt it was going to turn out to be a big thing. It was just to our disappointment that it took so long. But then, it always takes a long time to change people's minds, and it takes even longer for us to change an institution.

"So that's what the invention is all about, you might say: to try to convert people from one way of managing their affairs and doing what they think needs to be done, over into something which is at least on the surface different, but the thing is, many times all you were ever proposing was that they approach this new tool with an open mind and try to put it to work in every way they could."

John W. Mauchly, computer pioneer and co-inventor of the UNIVAC,
from an address given in Rome in 1973.

Preface

After graduating from college in 1977, I was a newspaper reporter for 24 years before returning to academia in 2001. In the fall of that year, I launched a new career as a journalism educator. I also began what came to feel like an endless career as a doctoral student. As I pondered possible topics for my dissertation, I thought about a phenomenon that had perplexed me as a journalist: a widespread lack of enthusiasm in journalism for adopting the computer as a tool to unearth stories and trends, especially in the years before the Internet became ubiquitous in newsrooms. In my second year as a doctoral student, when a journalism history course required me to write a research paper from primary sources, I decided to go back and revisit that issue. As I explored what turned out to be the sparse literature on the history of the computer as a tool for news reporting, I wondered how it all started – how journalists and computers first crossed paths. I wondered, too, whether those early experiences might tell us anything useful about the subsequent reception and deployment of computers as information tools in journalism.

That inquiry led to this dissertation, which explores the early intersection of computing and journalism through election-night reporting more than a half century ago. It was, like our own time, an unsettled era of new technologies, new venues for news, and important questions about whether and how journalism and new technologies might have anything to do with each other. My quest has taken me across the country in search of documents, recordings, artifacts, and participants. But the longer I worked on finding the buried stories of election-night computer use in1952, the more I realized it would be a Herculean task to track down all the extant pieces of this puzzle – Herculean even though

the focus, at least at the start, was largely on a period of a just a few hours on one night. I come to the end of this phase of my research – the writing of this dissertation – with more questions than when I started, certain there is much more to know about election night 1952, its context, its aftermath, and the parties involved.

With that caveat stated, I do hope readers will find this dissertation useful. At the heart of the issue that drew me into this study are, I believe, important questions about what journalism is and what it might be. By all accounts, journalism is not only wrestling with profound questions about its economic viability, but is facing either a real or perceived crisis of public confidence in the quality and relevance of the work. My own sense is that this crisis is real, though I am not convinced that the crisis is entirely new. I doubt that the current state of affairs signals the death knell for the enterprise of journalism – independent of whatever fate awaits the particular organizations for which journalists work or the types of media by which journalism makes its way to readers, viewers, and listeners. I do suspect that the trained journalist, to survive, will have to make the best use of available and practical tools. If journalists are not using those tools, or not using them well, or only using them in limited ways, then one has to wonder why. I have done that. I hope what I have found will be helpful to anyone who is inclined to consider the past in order to better navigate the present and plan for the future.

For Gail and Molly

Acknowledgements

I have brainstormed this project so incessantly with so many people and received so much support that it is hard to know where to begin the process of acknowledging that help. Parts of the first chapter describe the meandering and serendipitous path I followed to track down source material. But I would also make a note here of the individuals and institutions whose help was vital in opening doors, offering ideas, and, in one way or another, easing the burden of completing a dissertation while carrying on with the rest of my life.

I am grateful to Chris Callahan for launching me on this adventure when he recruited me from the *Washington Post* to the University of Maryland's Philip Merrill College of Journalism in 2001. He was then associate dean of the College of Journalism and is now dean of the Walter Cronkite School of Journalism at Arizona State University. I am also grateful to Tom Kunkel, who was dean of the College of Journalism during my first years here and has remained a friend and adviser since becoming president of St. Norbert College in De Pere, Wisconsin.

Professor Emeritus Maurine Beasley, who has been a member of my committee from the start and is now its chair, pointed out to me – because I could not see for myself – that a paper I wrote on the early use of computers in election-night broadcasting had the seeds of a workable dissertation. Her encouragement and her insight have been vital to the completion of this project.

Professor Robert Friedel, also a member of my committee from the start, let me drop in on him literally dozens of times over the past few years, helping me immensely as

University of Maryland's College Park campus; Peggy Kidwell at the National Museum of American History; Paul Ceruzzi at the National Air and Space Museum; Philip Meyer, professor emeritus at the University of North Carolina, Chapel Hill; Alexander Magoun, executive director of the David Sarnoff Library, Princeton, N.J.; Raymond Failoa and John Behrens at CBS Audience Services; Brecque Keith at the Wayne State University Archives; Carrie Seib and Stephanie Crowe at the Charles Babbage Institute at the University of Minnesota; Valerie Komor and Sam Markham at the Associated Press Corporate Archives; Assistant Professor Mike Conway at the Indiana University School of Journalism; Assistant Professor Dale Cressman at Brigham Young University; Paul C. Lasewicz and Dawn Stanford at IBM Corporate Archives; Emerson W. Pugh, a historian of IBM technology; Tim Bergin, recently retired from American University and a collector of artifacts in the history of computing; and Dan Rooney at the National Archives in College Park, Md.

Richard Roberts, CEO of Monroe Systems for Business, gave me a huge boost early in this research by opening the historical records of the Monroe Calculating Machine Company to me. Dorothy Burkhart also provided immeasurable help by sharing with me the papers of her late husband, William Burkhart, an inventor and unsung pioneer of small-scale computing about whom you will read more in this dissertation. A number of individuals who took part in the events I describe or knew some of the players were generous with their time, records, leads, and recollections. They include Richard LaManna, Vincent Pogorzelski, Stephen E. Wright, Max Woodbury, Monroe and Frederica Postman, and Morgan Huff. Two of the people whom I interviewed, Irving

Gardoff, a colleague of Burkhart, and former NBC News President Reuven Frank, have since passed away. I was honored to have had the chance to speak with them.

Very special thanks go to Peter Vaslow, whose wisdom helped me be open to the possibilities for a life outside the newsroom and then whose friendship helped keep me sane, focused, and enthusiastic over the many years during which this project took shape. I also owe a debt to Doris Mattingly, an exemplary piano teacher, who provided me with encouragement for this endeavor and reminded me, through her own actions, that mastery of anything – whether playing piano or wrestling a dissertation to the ground – is hard work and takes time to do well.

Finally, there are the two people who have had to put up with this project, day in and day out, and without whose love and support it most certainly would not have seen the light of day. They are my wife, Gail, and my daughter, Molly.

One of the surprising finds in the subject of my research was the importance of collaboration in its many forms for the rollout and spread of computing in journalism. In retrospect, it should not be a surprise that this theme presented itself to me. Just one author is listed on this dissertation. But there were many, many collaborators.

Table of Contents

Chapter 1: Introduction

The Paradox

In the fall of 2002, I came across an article that caught my attention for its relevance to my recent change of career. A year earlier, after nearly a quarter century in various newsrooms, I had taken up a new vocation as a journalism educator. I was teaching a course in what had come to be known in journalism circles as "computer-assisted reporting." The term generally referred to the use of the computer as an analytical tool for news reporting, especially when applied to the analysis of government records stored in database files: city crime reports, county restaurant inspections, federal contracts, and the like. The article that caught my eye was written by a journalist specializing in commentary on the news media. It was largely contemptuous of journalism schools. And it included this dig: "I'd rather hire somebody who wrote a brilliant senior thesis on Chaucer than a J-school M.A. who's mastered the art of computer-assisted reporting." Why? "If you can crack Chaucer," he explained, "you've got a chance at decoding city hall. If you're a computer-assisted reporting wizard, maybe you can reformat my hard drive." [1]

This passage was striking in several ways. First, there was no small irony in the fact that the piece appeared in *Slate*, founded six years earlier as a creature of the computerized world of cyberspace, a pioneering online magazine of news and commentary. Second, the argument seemed to suggest as unthinkable the idea that

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[1] Jack Shafer, "Can J-School Be Saved? Professional Advice for Columbia University," *Slate*, Oct. 7, 2002, http://www.slate.com/id/2071993/.

someone who had facility with computer analysis could also parse complexity in the

worlds of culture and politics. Third, for several years, leading news organizations had

been actively recruiting reporters with skills the *Slate* piece dismissed. Three years

earlier, the *Columbia Journalism Review*, in a story about the 1999 Pulitzer Prizes,

observed that "Computer-assisted reporting, no longer a toy but an invaluable tool,

played a key role in many entries."[2]

And yet the sentiment expressed in the *Slate* piece did not seem at all uncommon.

A tour through the rather thin literature on computer use in the newsroom confirmed what

I had seen myself: that the practice of computer-assisted reporting had spread wide but

not deep.[3] That is, while many newsrooms had at least one staff member engaged in the

practice, it was also true at that time that in any given newsroom, only a small minority of

journalists possessed the skills and inclination to include computer-assisted reporting in

their approach to finding and researching news stories. By then, computers in the

newsroom had come to be used increasingly for all sorts of other activities – writing,

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[2] "Inside the Pulitzers," *Columbia Journalism Review,* May-June 1999, 26-27.

[3] Bruce Garrison of the University of Miami, one of the few scholars to do research in this area, reported in 2001 that "little is known about computer use for newsgathering." Conducting annual surveys of newspapers for several years in the 1990s, he reported that by 1998, nine out of 10 newsrooms "reported using computers to find and analyze information." As for the numbers doing this at each of those newspapers, the mean was 7.5 persons, with many newsrooms reporting that two to 10 persons engaged in these practices; Bruce Garrison, "Computer-Assisted Reporting Near Complete Adoption," *Newspaper Research Journal* 22, no. 1 (Winter 2001): 65-79. The published findings did not quantify the degree to which various tools were used – that is, how much of this was actually using the computer for analysis. One of the few studies to get at this, published in 2000, surveyed 28 computer-assisted reporting trainers at 27 newsrooms; the trainers estimated that only 10 percent of reporters at their newspapers had done any sort of analysis with a spreadsheet, only four percent had worked with a computer database (i.e. using database management and analysis software such as Microsoft Access), and fewer than one percent had used computer mapping or statistical programs. Half of the reporters in these newsrooms were not routinely using the Internet for research; Scott R. Maier, "Digital Diffusion in Newsrooms: The Uneven Advance of Computer-Assisted Reporting," *Newspaper Research Journal* 21, no. 2 (Spring 2000): 95-110. In my own experience providing computer-assisted reporting training to colleagues in two newsrooms to 2001 – and in attending conferences and conferring with computer-assisted reporting practitioners and trainers elsewhere – the percentage of reporters using spreadsheet and database analysis programs, let alone more specialized tools, was small.

layout, communication, the retrieval of archived news stories, and, eventually, Internet

searches – but not so much for analysis of government records stored in database form or

databases created by journalists from paper records. And while some advocates of

computer use in the newsroom were embarrassed that the practice needed a term calling

attention to the computer as a special tool – especially as late as at the end of the 20th

century – it was also clear that resistance, barriers, and other challenges abounded when it

came to using the computer as a tool for analysis.[4]

So here was a paradox in the relationship over time between news reporting and

computers. News reporting is an information-centered enterprise. In this enterprise, there

is a premium on the ability to find information, to find patterns in that information, and to

find a narrative thread that makes sense of those patterns. The computer is an

information-centered tool. It can be used to interrogate large reservoirs of information

and spot trends, leads, patterns, and even questions that might not reveal themselves in a

timely fashion using other means. In other words, the computer would seem to be a tool

with a great deal of promise in an information-centered endeavor such as journalism.

The paradox, as it appeared to me, was that while the computer was being adopted as a

tool in the production and business side of journalism – from justifying lines of type to

processing paychecks, and later from word processing to the layout of newspaper pages –

as an information machine the computer was far slower to be adopted a tool for reporters

to use in unearthing stories. In 1995, an advocate of more computer use for analytical

reporting spoke of "the challenge of moving from the nerd in the corner to the middle of

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[4] Philip Meyer wrote of computer-assisted reporting, known to practitioners as "CAR," that "CAR is an embarrassing reminder that we are entering the 21st century as the only profession in which computer users feel the need to call attention to themselves," in "The Future of CAR: Declare Victory and Get Out!" in *When Words and Nerds Collide: Reflections on the Development of Computer-Assisted Reporting* (St. Petersburg, Fla.: The Poynter Institute for Media Studies, 1999), 4-5.

the newsroom."[5] Even as the 21st century began, journalists' primary uses of computers

in the course of reporting tended to be associated with Internet searches, news library

searches, and e-mail.[6] While the business world had come to employ data mining as a

valuable tool, the notion that desktop computers and off-the-shelf software might be used

to analyze government records was not widely embraced by journalists. This left me

wondering why. My approach here, rather than asking why this application of technology

was not used more, was to explore the uses that *were* made and try to understand what, if

anything, was distinctive about them. I decided to look at what happened when

journalists first encountered computers as a potential tool. How and why did computers

make their way into the work of news reporters? Were computers embraced, resisted, or

perhaps both at the same time? Did the early experiences play a role in the way

computers were viewed as potential tools for news reporting or the kinds of stories for

which computer analysis might be used?

The scholarly literature addressing the intertwined histories of news reporting and

computing is not voluminous. What references I could find to the very earliest unions of

computers and journalism pointed to television news broadcasting on election night in

1952.[7] The first-ever coast-to-coast television network broadcasting of election returns

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[5] Rose Ciotta, then a practitioner of computer-assisted reporting at the *Buffalo News*; comments made in 1995 and cited by Bruce Garrison, *Successful Strategies for Computer-Assisted Reporting* (Mahwah, N.J.: Lawrence Erlbaum Associates, 1996), 9-10.

[6] Garrison, "Computer-Assisted Reporting Near Complete Adoption"; Maier, "Digital Diffusion in Newsrooms."

[7] See, for example, Margaret H. DeFleur, *Computer-Assisted Investigative Reporting: Development and Methodology* (Mahwah, N.J.: Lawrence Erlbaum Associates, 1997), 36-39; Matthew M. Reavy, *Introduction to Computer-Assisted Reporting: A Journalist's Guide* (Mountain View, Calif.: Mayfield Publishing Company, 2001), 3-4; Patricia L. Dooley, foreword by Neil Chase, *The Technology of Journalism: Cultural Agents, Cultural Icons* (Evanston, Ill.: Northwestern University Press, 2007), 168-169.

featured efforts to produce computer-generated forecasts of the outcome based on the early vote count and comparisons to historical election data.

Sitting at the intersection of so many threads in American culture – journalism, television, computing, politics, information management, and the evolution of popular culture itself – the episode yields at least a mention in histories from a variety of fields. In telling the story of the development of computing during the 20th century, for example, a number of historians have singled out election night 1952 for special mention. It has been described it as a "pivotal moment in computer history," coming at a time when few people had seen a computer.[8] It is said to have been "one of the most dramatic events in the early days of computer usage," one that "inaugurated the intrusion … of computers into the public consciousness." [9] Yet another historian of the early years of computing writes, "No event on television proved more revealing and dramatic in publicizing computers to the American public than the presidential elections of 1952."[10] Decades later, newspapers would describe this as the point at which computers and elections became "wired together" and as "perhaps the most significant live TV performance ever by a computer."[11] As 2000 approached, *USA Today* declared the 1952 introduction of

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[8] Martin Campbell-Kelly and William Aspray, *Computer: A History of the Information Machine* (New York: BasicBooks, 1996), 123.

[9] The first of these quotations is from Michael R. Williams, *A History of Computing Technology*, 2nd ed. (Los Alamitos, Calif.: IEEE Computer Society Press, 1997), 363. The second quotation is from Paul E. Ceruzzi, *A History Of Modern Computing*, 2nd ed. (Cambridge, Mass.: MIT Press, 2003), 31-32.

[10] James W. Cortada, *The Digital Hand: How Computers Changed the Work of American Manufacturing, Transportation, and Retail Industries* (Oxford: Oxford University Press, 2004), 43.

[11] Peter H. Lewis, "Armchair View of Election," *New York Times*, Nov. 3, 1992, C12; Kevin Maney, "In '52, Huge Computer Called Univac Changed Election Night," *USA Today*, Oct. 26, 2004, http://www.usatoday.com/money/industries/technology/maney/2004-10-26-univac_x.htm.

computing into election night coverage to be one of the top media events of the 20th century.[12]

To be sure, the 1952 episode is not always described in such monumental terms. A cultural historian characterized it as "an amusing anecdote."[13] And, in fact, it is often portrayed that way elsewhere: as a curiosity, thinly described and even more thinly sourced, in treatments of subjects ranging from the role of information in American culture to quadrennial retrospectives of election nights past. It has been mentioned in hundreds of accounts in newspapers, magazines, journals, scholarly books, popular books, textbooks, broadcasts, documentaries, museum exhibits, and Web pages.[14] As I worked on this project, the story was brought out again on the occasion of the 2008 elections and the 2009 death of Walter Cronkite, who anchored his first election night broadcast for CBS in 1952.

And yet this election-night computer use in 1952 has received little scrutiny from scholars working from primary sources. Where the episode is mentioned, the secondary sources cited often trace back to limited accounts in memoirs or celebratory accounts of the early computer years, and these typically lack citations to primary sources.[15] Studies dealing with the early development of computing and the framing of early computers in popular media include descriptions and discussions of the 1952 episode based largely on

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[12] Joe Saltzman, "The Top 10 for the 20th Century: Mass Media," *USA Today Magazine*, Nov. 1, 1999, 66.

[13] Theodore Roszak, *The Cult of Information: A Neo-Luddite Treatise on High-Tech, Artificial Intelligence, and the True Art of Thinking* (Berkeley: University of California Press, 1994 [1986]), 7.

[14] Based on searches of databases including: Lexis-Nexis, Google, Google Books, Google Scholar, Amazon ("search inside" feature), NewspaperArchive.com, EBSCO databases, and JSTOR.

[15] These include: Harry Wulforst, *Breakthrough to the Computer Age* (New York: Harry Scribner's Sons, 1982), 161-171; and Herman Lukoff, *From Dits to Bits: A Personal History of the Electronic Computer* (Portland, Oregon: Robotics Press, 1979), 127-131.

contemporary news accounts or on secondary sources.[16] I have found no published study

taking advantage of a broad range of primary source materials beyond contemporary

newspaper and magazine accounts.[17] One reason for this is completely understandable.

In the present study, it has taken years, contact with dozens of archives around the

country, and efforts leading to many frustrating dead ends in order to track down the

complete 1952 election-night broadcasts of two television networks, to find several hours

of broadcasting by one radio network, to identify and locate surviving participants, and to

examine thousands of pages of relevant documents and publications. And even with that,

it is clear now that so much more has yet to be unearthed – or has simply vanished –

leaving the story to be cobbled together, at best, from a decidedly incomplete historical

record.

I have come to believe more strongly than when I started that this sort of

historical study has value today, when questions about the place of computer technology

in journalism remain unsettled. What is striking about election-night computer use in

1952 is that it came so early in the history of commercial computing, at a time when the

machines were commonly referred to as wondrous "electronic brains."[18] It would be easy

to assume that once computers came along, they would be patently obvious choices as

election-night tools. I confess to routinely making that assumption before starting this

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[16] See, for example, David P. Julyk, "'The Trouble With Machines Is People.' The Computer as Icon in Post-War America: 1946-1970" (Ph. D. diss., University of Michigan, 2008); C. Dianne Martin, "The Myth of the Awesome Thinking Machine," *Communications of the ACM* 36, no. 4 (April 1993): 120-133; Brian Winston, *Media Technology and Society: A History: From the Telegraph to the Internet* (London: Routledge, 1998), 193-194.

[17] An unpublished master's thesis completed 40 years ago by Elmer Lower at Columbia University did make use of some additional resources and two interviews for an account of election night 1952. It will be described later in this chapter.

[18] Common references to computers as "electronic brains" appear in Chapters 4 through 8.

project. But this choice was not obvious to the journalists involved, and, what's more, at least some were openly skeptical and even dismissive. Several hours into the 1952 election-night telecast on CBS, for example, the footage reveals the distinguished-looking, somber-toned correspondent Eric Sevareid, with a lit cigarette in a holder in one hand, venturing a telling comment about computer use during the broadcasting of returns. His remarks followed a series of gaffes associated with the use of a giant, room-sized UNIVAC computer to forecast the outcome of the presidential contest in real time on election night. "I'm delighted," he told the equally serious Cronkite, the two of them then cracking smiles, "that UNIVAC, our machine competitor, was wrong for awhile and we were consistently right with a human voice – or we'd all be victims of technological unemployment pretty soon."[19] It is unlikely that Sevareid actually feared losing his job to a computer, especially in light of the penetrating analyses that he and his colleagues, including Edward R. Murrow, offered for the direction and meaning of the election results.[20] But Sevareid was not alone in poking fun at what he and at least some others treated not as a potential tool but as an incursion into the turf of election-night reporters and commentators. The computer would make its way into journalism early and with a great deal of fanfare, but, as this broadcast and other commentaries before and after would reveal, not with a uniform degree of acceptance or a fixed trajectory.

That the 1952 episode has not been studied much does not mean that it has been invisible. Quite the contrary, as noted earlier. There is a story about computer use on election night in 1952 that quickly took hold and has been repeated innumerable times,

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[19] Election Coverage, part 5, broadcast, CBS Television, Nov. 4-5, 1952, Paley Center for Media, New York.

[20] Ibid, parts 1-8.

decade after decade. The story varies in the telling but typically includes these details: In that year, when computers were rarities, CBS arranged with manufacturer Remington Rand to have a UNIVAC computer in Philadelphia predict the outcome of the presidential contest. This would be done during the Nov. 4 election-night broadcast, based on a comparison of early returns to historical election data. When, with just a fraction of the vote counted, the UNIVAC predicted a landslide for the Republican candidate, Gen. Dwight D. Eisenhower, over his Democratic opponent, Illinois Gov. Adlai Stevenson, the numbers were met with disbelief. This result was at odds with expectations of a much closer race, and it was not aired. Instead, the UNIVAC's keepers in Philadelphia revised their program and, when the computer came out with a new forecast for a narrower Eisenhower victory – one more in keeping with those expectations – that's what CBS viewers saw. Only hours into the broadcast, when it was clear that Eisenhower had indeed pulled off a sweeping victory, was it revealed on air by a member of the UNIVAC camp that there had been an early prediction of a landslide – a prediction the audience did not see or hear at the time because the computer's keepers feared the machine had erred.

These details are correct, as far as they go. But the story rarely stops there. In the telling and retelling, like a child's game of "telephone," it has undergone many variations, picking up details that are flatly wrong or, at the very least, are of uncertain provenance and not clearly supported by the historical record.[21] Some of these details have to do with whether or not CBS news personnel were in on the decision to withhold the first prediction of a landslide – and whether they even knew of it at that point in the

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[21] These issues will be explored in chapters 7 and 8.

evening. There are problems with various other enhancements to this account, especially in details about the chronology of events both behind the scenes and in front of the cameras. Assertions that the UNIVAC reaped a public relations bonanza are an oversimplification, too: the UNIVAC's performance itself met with decidedly mixed reviews for the machine, its keepers, the network, or all of the above together. What is clear is that positive spin came from a narrative which quickly came to prevail through accounts of the UNIVAC's unseen exploits, starting with the Remington Rand official's appearance on television late on election night and then taking hold with numerous retellings in the print media and on air.

 But there are also more serious questions about the message that this sketch of a story is typically meant to convey: the message that in this election-night debut for the computer, the "electronic brain" not only outsmarted its own programmers but was capable of seeing what reporters and commentators could not see as the early returns came in. Framing the episode in this way is especially problematic when it is done without access to primary sources that could enable a comparison of human and machine performance. Without that, it is too easy to make or repeat assumptions about how well the new technology worked, and an important question is missed: just how revolutionary was the introduction of computers into the election-night mix, and what was its value? There are other issues here, too. One deals with the tendency to use the expectations of a close race as a complete explanation for the lack of faith in the early prediction of a landslide. This focus neglects the question of whether there would have been other means – besides comparison to expectations – to assess the validity of such a prediction early on election night. Answering that question can help understand just how well the computer,

in this trial run as a journalistic tool, was integrated into the rest of the election-night

newsgathering and analysis operation at CBS.

Problems with this account don't stop there. As it turns out, even without any

embellishments, this story – told as a tale of CBS and UNIVAC – leaves out critical

aspects of that election night, including what was happening on the other television

networks and at other news organizations. I was first alerted to the possibilities of a more

complicated story when, in 2002, I came across an online newsletter dealing with the

history of Unisys, the eventual corporate successor to UNIVAC's earlier manufacturer,

Remington Rand. [22] There was a paragraph about the computer's use on that election

night in 1952, and it included this: "Jack Gould, the television writer for the *New York

Times*, was not impressed with either the UNIVAC or the much smaller Monrobot

computer used by the NBC network."

Another computer? Indeed, I would learn that the Monrobot, no larger than a

typical office desk, was manufactured by one of the leading calculating machine

companies of the day – the Monroe Calculating Machine Company – in an early foray

into the world of electronic computing. The Monrobot's creators did not see its

diminutive size as a drawback, but as a virtue – together with its purported ease of

operation and its relatively modest cost. Although I have since found references to the

Monrobot here and there, these are rare.[23] And in the election-night story, when the

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[22] George Gray, "UNIVAC I: The First Mass-Produced Computer," *Unisys History Newsletter* 5, no 1 (January 2001), http://wiki.cc.gatech.edu/folklore/index.php/UNIVAC_1:_The_First_Mass-Produced_Computer.

[23] For example, a search of Google that includes these words –1952, election, Eisenhower, Stevenson, Univac, Monrobot – yielded eight links when searched on August 15, 2009, and only three of those displayed content written after the 1950s and mentioning the use of both machines on election night. By comparison, when "Monrobot" was removed from the same set of search terms, Google generated 416 links. For a variety of reasons, these searches are far from perfect. Monrobot, for example, has sometimes

Monrobot makes an appearance at all, it has been treated as a sideshow to the UNIVAC main event. One reason may be that commonly cited sources for the election night story are memoirs and celebratory accounts written by players associated with – and limited in focus to – the CBS and UNIVAC camps, and published decades later.[24]

Yet here, it seemed, were the makings of an epic battle, or battles – between networks in the young medium of television, between fledgling television news operations, between players in the new and uncertain world of commercial computing, between different visions of what computing might be, between narratives about election-night computer use, and even between humans and machines, or at least between differing opinions about whether computers were appropriate tools for election-night journalism. I would learn that CBS and NBC issued dueling press releases and newspaper ads – and promoted their "electronic brains" on air in the run-up to the election.[25] Available records include scripts of two CBS radio news broadcasts devoted to the UNIVAC before the election, with correspondent Charles Collingwood referring to the computer as a "prodigious monster of electronic thought" and asserting that it would help the network report election results "faster and more accurately than is humanly possible."[26] NBC touted the Monrobot – in very exaggerated terms – as "America's

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been misspelled as "Mon-Robot" or "Mono-Robot." And the second search included links to some pages not related to the 1952 election-night broadcasts. But the two searches together are indicative on the version of the election-night story that has taken hold over time.

[24] These include: Sig Mickelson, *The Electric Mirror: Politics in an Age of Television* (New York: Dodd, Mead & Company, 1972); Sig Mickelson, *From Whistle Stop to Sound Bite: Four Decades in Politics and Television* (New York: Praeger, 1989); Lukoff, *From Dits to Bits;* Wulforst, *Breakthrough to the Computer Age.*

[25] These are detailed in Chapters 5-7.

[26] Charles Collingwood, "Report to the West," scripts, Oct. 15 and 22, 1952, Box 5, Folder 12, Charles Collingwood Papers, Wisconsin Historical Society (hereafter cited as WHS), University of Wisconsin, Madison, Wis.

fastest electronic brain" and featured it on the *Today* show and even on *The Kate Smith Hour*, a variety show, in promoting the network's election-night plans to use "miraculous machines that seem like something out of Buck Rogers."[27] On election night, while a UNIVAC was generating forecasts in Philadelphia, Collingwood was stationed in the cavernous CBS set at Grand Central Terminal in New York in front of a mock-up of a UNIVAC operator's console. The device featured flashing lights which were later said to have been hooked up to the kind of timers used for the blinking bulbs on Christmas trees.[28] A few blocks away in Rockefeller Center's famed Studio 8-H – once home to Arturo Toscanini and the NBC Symphony Orchestra – the Monrobot was in operation before the television cameras. Tended to on air by a young woman who worked for an insurance company, the Monrobot's results were reported and discussed by the distinguished-looking Morgan Beatty, one of the best-known NBC radio news broadcasters of the day.[29] A few months earlier, the Monrobot had been described in detail at a Navy symposium on small computers, but it would be making its debut for the general public – and generating an unprecedented amount of attention for Monroe – on election night. [30] *Electronics* magazine, in its December 1952 issue, published side-by-

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[27] Master Broadcast Reports for *Today* and *The Kate Smith Hour*, Nov. 4, 1952, in NBC Television Master Books, Oct. 31, 1952, to Nov. 4, 1952, Microfilm Box No. MT-286, NBC Collection, Recorded Sound Reference Center, Library of Congress, Washington, D.C.

[28] Lukoff, *From Dits to Bits,* 128.

[29] The details of the NBC broadcast are described in Chapter 7, based on a recording archived at the NBC News Archives, New York: Presidential Election Coverage, parts 1 through 12, NBC Television News, 9 p.m., Nov. 4, to 3 a.m., Nov. 5, 1952, identification numbers S521104 and S521105.

[30] E. J. Quinby, Monroe Calculating Machine Company, "The MONROBOT Electronic Calculators," in *A Symposium on Commercially Available General-Purpose Electronic Digital Computers of Moderate Price*, sponsored by the Navy Mathematical Computing Advisory Panel, 7-12 (Washington, D.C.: Department of the Navy, Office of Naval Research, report distributed by the U.S. Department of Commerce, Office of Technical Services. May 14, 1952); this report is reproduced at http://ed-thelen.org/comp-hist/Computers-1952-hand.html; a paper copy of the report and the distribution list is available in Box 95, Computer Documents, National Museum of American History (hereafter cited as NMAH), Washington, D.C.

side photos with a caption that read: "Univac (left) and Monrobot (right) also ran on November 4 in race to predict outcome of election on basis of preliminary returns and past elections."[31] The available evidence indicates that the Monrobot's assessment of the odds of an Eisenhower victory was presented to the NBC television and radio audiences ahead of the first airing of the UNIVAC predictions.

As I looked into the dueling machines and the dueling networks that made use of them, it turned out there was still more. In a *Time* magazine piece about the way the UNIVAC and Monrobot were to be used on election night on CBS and NBC, an ABC news director was said to have "professed disdain for such electronic gimmicks." [32] He touted instead, by name, some of the "human brains" who would be used on his network: Elmer Davis, John Daly, Walter Winchell, and Drew Pearson. But I discovered well into my research that another titan of information processing, IBM, was in the mix on election night, too, in conjunction with coverage at ABC – and elsewhere. This included use of IBM equipment that a company publication would later boast had played "a vital role the computation of vote returns" and comparisons with data from past elections.[33] There was one such installation at the ABC network's massive studio in New York and a separate installation at the *New York World-Telegram and Sun*, where the local ABC station had

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[31] "Computers Sweat Out Election Results; Nonpartisan Electronic Machines Vie With Human Experts to Predict Outcome," *Electronics* 25, no. 12 (December 1952): 14-16.

[32] Attributed to ABC News Director John Madigan; "Radio: Univac & Monrobot," *Time*, Oct. 27, 1952, http://www.time.com/time/magazine/article/0,9171,890412,00.html; similar disdain for the idea of using "electronic brains" on election night was expressed in an ABC release touting the brains of its human commentators, according to a television column published two days before the election; Merrill Panitt, "Networks' Full Resources Tuned for Election Night," *Philadelphia Inquirer*, Nov. 2, 1952, 23, 28.

[33] "IBM Machines Play Key Parts in Elections," *Business Machines*, Nov. 18, 1952, IBM Corporate Archives (hereafter cited as IBM-CA), Somers, N.Y. *Business Machines* was an IBM publication for its employees.

set up shop for its election-night coverage.[34] Still another arrangement involved the use of

IBM equipment based at the Lockheed Aircraft Corporation in Burbank, Calif., for NBC

coverage in the West.[35] And IBM equipment for tabulating returns served a variety of

other news operations in cities around the country, too, including Washington, D.C.,

where it was brought in for use at the Associated Press, and in Hartford, where it was

credited with helping the *Hartford Courant* call the state of Connecticut for Eisenhower

just 40 minutes after the polls closed.[36]

IBM was then still weeks away from the shipment of what is typically described

as its first commercial electronic computer – a model dubbed the "Defense Calculator,"

or the "701" – from the manufacturing plant to IBM headquarters, and several months

away from the machine's public unveiling and official debut as a commercial product.[37]

But there were existing IBM commercial machines that, while not typically seen as

"computers" in the sense that word has acquired, represented a transitional technology.

Over time, the definition of a computer has come to include the ability to store and run a

program from internal "memory," with the capacity to automatically alter the program as

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[34] "IBM Machines Play Key Parts in Elections," *Business Machines*; "Lightning-Fast IBM Devices to Help Speed W-T&S Televised Vote Count," *New York World-Telegram and Sun*, Oct. 31, 1952, 25; Edward Ellis, "Television Tells Election Story," *New York World-Telegram and Sun*, Nov. 5, 1952, 12.

[35] "IBM Machines Play Key Parts in Elections," *Business Machines*; Walter Ames, "Networks, Local Stations to Use All Facilities Covering Presidential Election Tonight," *Los Angeles Times*, Nov. 4, 1952, 20; Robert J. Bemer, "Lockheed Aircraft – California Division; Computer History Vignettes," http://www.trailing-edge.com/~bobbemer/LOCKHEED.HTM.

[36] Douglas Cornell, "Okay, Okay, Election 'Brain' – But Can It Write Leads Too?" *AP World*, Winter, 1952-53, 6; "The Courant Prepares for Operation Election," *Hartford Courant*, Nov. 2, 1952, Sunday Magazine, 3; "The Dispatch That Heralded Ike's Landslide," *Hartford Courant*, Nov. 9, 1952, 18; "IBM Machines Play Key Parts in Elections," *Business Machines*.

[37] The first of the 701 models was shipped from the IBM plant in Poughkeepsie, N.Y., to IBM headquarters on Madison Avenue in late December 1952. The first operation of a 701 by a customer came on April 3, 1953, at the Los Alamos Scientific Laboratory in California. And there was a public unveiling and demonstration of the 701 in Manhattan on April 7, 1953. Charles J. Bashe, Lyle R. Johnson, John H. Palmer, and Emerson W. Pugh, *IBM's Early Computers* (Cambridge, MA: The MIT Press, 1986), 161.

it runs based on intermediate results. This "stored program" concept was not a feature of the IBM equipment used on election night. Still, IBM had been the first to commercialize, shortly after World War II, electronic calculating machines – the "603" and then the "604." These could carry out programs – eventually numbering dozens of steps – based on instructions wired by hand into a control panel. Then in 1949, IBM came out with an arrangement of existing equipment that cobbled together the "604" – and later a successor, the "605" – with several other IBM devices, providing the ability to run longer programs from a combination of hand-wired "plugboards" and punched cards.[38] This cluster of equipment was marketed as the "Card-Programmed Electronic Calculator," or CPC, and it occupies an important place in computing history. This is not because of the CPC's technical specifications. In fact, by 1952 IBM engineers already recognized the CPC as a technological dead end – though the machines would be produced and used for several more years. Rather, these were among the first commercial devices capable of carrying out computer-like operations at electronic speeds, and they were manufactured by the dozens and then the hundreds, helping to spread knowledge of programming, attract customers, and lay a foundation for the marketing of commercial computers – and IBM's rapidly-achieved supremacy in that field – in the 1950s.[39]

The few available accounts of IBM's various roles on election night are not always clear on just which IBM devices were used where. Lockheed's contribution to the election-night mix was definitely a CPC. One account refers to the devices seen by ABC viewers on election night – at the network studio and from the *World-Telegram and Sun*

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[38] This will be discussed in Chapter 4.

[39] See Chapter 4 for a discussion of the IBM's electronic calculators, Card-Programmed Electronic Calculator, and early commercial computers.

newsroom – as CPCs, while two other accounts leave open the possibility that the featured devices were electronic calculators used together with other punched-card machines, but without the full complement of additional equipment that the CPCs included. In any event, IBM machines were in the mix on election night. They came complete with delegations of IBM service staff to run them, and they provided – at least for the *New York World-Telegram and Sun* – an opportunity for promotion. "Lightning-Fast IBM Devices to Help Speed W-T&S Televised Vote Count" was the headline on the newspaper's story about its upcoming election-night collaboration with IBM and ABC, promising that a "battery of IBM equipment of the very latest design" would be installed in the paper's city room, "nerve center of the combined newspaper and television coverage."[40] The *Hartford Courant*, in a Sunday magazine article about its own preparations for "Operation Election," also cited its plan to use "large mechanical-brains" – courtesy of IBM – to "keep abreast of the election returns" that newspaper subscribers could expect to find tabulated and analyzed in the editions on their doorsteps on the morning after the election.

Here, then, was an increasingly rich landscape coming into view for election night in 1952, one in which computers and transitional, computer-like devices appeared not only to be tools for calculation, but tools for publicity and prestige as well. In setting out to answer the question of what happened on that night – and why computers made such a splashy entrance into journalism in that way and in that time – this dissertation seeks to avoid the assumption – one easily made with an eye to the historical rear-view mirror – that computers were simply bound to find their way into journalism and into election-

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[40] "Lightning-Fast IBM Devices to Help Speed W-T&S Televised Vote Count," *New York World-Telegram and Sun*, Oct. 31, 1952, 25.

night reporting. Certainly, the slow and limited adoption of computer analysis for other

uses in journalism after 1952 – and the clear resistance or at least lack of enthusiasm for

computers among at least some serious journalists – calls into question the idea that the

computer was just an obvious and natural choice for deployment on election night in

1952 and moved into journalism as a force unto itself. In fact, the nascent computer

industry was not yet established as an essential player in American life, and broadcasters

were still trying to establish television as a respected medium for news. For both, the live

experiments with election-night computing posed risks.   Yet as my interest turned to the

way elections had been reported before the computer era, I could also see a very rich set

of circumstances in the century leading up to 1952 that might help me better understand

the context for that episode. These circumstances included a well-established set of

journalistic practices and tropes. Journalists long had used credible methodologies for

making sense of early election returns, and they made a habit of placing themselves at the

center of election-night events long before the era of broadcasting. In setting the stage for

election night in 1952, this dissertation explores election nights as central events in

American culture that have served as showcases both for new technology and news

reporting, events that have engendered both competition and collaboration where the

various interests of journalists and technologists intersected.

It would be easy to dismiss the race to report election returns as part of a class of

what some scholars have term "media events" – in this case, a lot of hype and churn over

something that will be known soon enough anyway.[41] But to make a case here at the

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[41] Daniel Dayan and Elihu Katz, *Media Events: The Live Broadcasting of History* (Cambridge, Mass.: Harvard University Press, 1992). Dayan and Katz study the ritualized structure and the effects of live broadcasting of planned historic events, which they classify as contests, conquests, or coronations. Dayan and Katz mention the "genre of election-night television" in a footnote (17, 272) to their discussion of the

outset for the importance of election nights as worthy subjects of study – and of interest

to more than journalists, politicians, government job holders, policy advocates, and voters

at large – I would offer an observation about the importance of these infrequent events to

researchers from several academic disciplines and allied areas of practice. For decades

now, the counting of votes has offered scholars and market researchers a rare opportunity

to test their theories and methods. Elections are occasions when political scientists,

sociologists, and practitioners of statistical and quantitative methodologies can evaluate

their means of measuring public opinion. Statistical sampling, after all, is often involved

in measuring that which cannot be precisely or effectively known in any other way,

including the opinions of very large groups of people and the factors best able to predict

group behavior. But elections do provide a chance to test the adequacy of sampling

algorithms and other assumptions of survey methodologies. On election night, students

of human nature can find out – often quickly – whether their algorithms and assumptions

hold up. In the wake of the 1936 presidential election, when the *Literary Digest* was

famously wounded by fatal flaws in its massive nationwide straw poll of self-selected

respondents, the more scientific selection of smaller samples vindicated some of the

rising stars in survey research. The *New York Times* took note, explaining that the

outcome of the election was important in demonstrating the value of scientific polling to

business leaders for market research. The story, which used the term "straw poll" for

polling generally, began this way:

> Having focused the attention of the public and business men on the
> importance of pre-determining consumer reactions, straw polls in the last
> election will prove the biggest boon to market research the profession has

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effects of media events on political institutions, situating these broadcasts "midway between the Contest of
presidential debates and the Coronation of presidential inaugurals."

received in years, specialists asserted here yesterday. Disregarding The
Literary Digest poll, which they insist was not scientifically conducted,
research men praised the Gallup and Crossley surveys and predicted that
more intensive inquiries of that character will feature future elections.[42]

Even as the 1952 election approached, the importance of election results in testing

scholarly theories was recognized in a study published by Mississippi State College with

assistance from heavyweights in the still-evolving field of public-opinion measurement.

These included Hadley Cantril, director of the Office of Public Opinion Research at

Princeton University, and George Gallup, director of the American Institute of Public

Opinion.[43] The study focused on the election-forecasting abilities of county party

chairmen. Here was an opportunity to examine how the subjective judgments of

partisans, based on personal experience, would match up against the objective,

quantitative judgments of impartial outsiders – a question deemed to have important

repercussions for the application of social science to the formulation of government

policy.[44] Indeed, while election-night reporting might be dismissed in some quarters as a

trivial sideshow in the political process, it is likely that scholars who study public opinion

are among those watching the reporting of returns most closely, election after election,

for the verdict that might be rendered on some of their own work.

Plan of this Dissertation

This dissertation is divided into two general parts. After this introductory chapter,

the first of these two parts takes a step back from 1952 and looks at journalism's election-

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[42] Charles E. Egan, "Straw Polls Help Market Research," *New York Times*, Nov. 8, 1936, F9.

[43] William Buchanan and Virginia V.S. Zerenga, *County Chairmen as Election Forecasters* (State College,
Miss.: Social Science Research Center, Mississippi State College, 1952), iii.

[44] Buchanan and Zerenga, *County Chairmen as Election Forecasters*, 1.

night practices before computers. The second part of the dissertation focuses largely on the events of 1952 and their aftermath: the conditions under which players from the world of computing and journalism joined forces for election reporting; their preparations; the events of election night; responses and reactions; and some subsequent developments in election-night history.

In the balance of Chapter 1, I will review the extant accounts of election-night computer use in 1952 and the literature dealing with the history of election-night journalism before 1952. I will also consider two theoretical perspectives that have been relevant in approaching this study. One is from the field of communication studies and deals with the diffusion of innovations. The other is from the study of the history of technology and focuses on the role of users and social practices in the trajectory taken by new technologies. I will also revisit these theoretical perspectives at the end of the dissertation and make a case that the point at which these two frameworks intersect is a valuable one for examining the reception and deployment of computers and their applications in journalism. Chapter 1 will conclude with a discussion of methods and sources for this project, which became a treasure hunt, more or less, for buried pieces of the story of election night 1952.

Chapters 2 and 3 look at ways in which what seemed revolutionary about election night 1952 as plans developed – the use of computers as tools for broadcast journalism before a nationwide audience – had a great deal of continuity with past practice in the culture of election-night news reporting. Reaching back into the 19th century, we can find salient features in that culture which carried on into 1952, and these will help us understand why election night makes sense as a venue for experimentation with

innovative computing technologies in journalism. Well before 1952, methodologies had been worked out by print journalists for early forecasting on election nights. In addition, election nights also served as venues for showcasing new technology – and for deploying dazzling new technologies in the service of showmanship orchestrated by news organizations to attract attention and enhance prestige. Chapter 2 deals with the period from the mid-19th century up to the early 20th century, before early experiments in radio broadcasting. Chapter 3 deals with the election-night journalism in the broadcasting era and the continuation of themes seen in the earlier period. These chapters are not intended as thorough histories of election-night journalism, but rather as explorations of particular themes running through that history which are recognizable in the run-up to election night 1952 – including the special place of election night in the culture of journalism for telling the "story of the story" and putting journalists at center stage in the night's events.

Chapter 4 sets the stage for understanding the early use of computers in journalism as a set of events that brought together two worlds – the nascent commercial computer industry and the nascent enterprise of television news. Neither was yet central to American culture. Within each of these worlds there was a desire to be noticed and taken seriously, and within each of these worlds there was intense competition. There were also divergent visions of computing. These conditions help us see the willingness to conduct live experiments in the use of a new technology on election night as a balancing of risk with the opportunity for exposure and relevance.

Chapter 5 continues setting the stage for election night 1952, starting with the origins of plans for using computers to identify trends and forecast the outcome. This chapter explores the behind-the-scenes preparations by technologist-journalist alliances to

advance intersecting agendas. It also explores the way computers were represented to the public in the course of promoting or reporting on election-night plans. This chapter reveals nuances in the dual themes of "man vs. machine" and "man plus machine" that permeated the discussion around the deployment of this technology. We can also see the way computers were deployed to serve both practical and symbolic purposes, as tools both to analyze the vote and to compete for attention and prestige. In addition to discussing one alliance between NBC and the Monroe Calculating Machine Company and another alliance between CBS and Remington Rand, this chapter reports on the more ambiguous case of the association of ABC and IBM, as well as the IBM role at several newspapers and wire service offices. Also important in the pre-election landscape and discussed in this chapter was the unhappy memory of 1948 for pollsters and journalists alike, when pre-election expectations based on polling colored the reporting of election returns. The resulting caution in the reporting of polling data in the run-up to the 1952 election would feed into decisions made in the high-pressure atmosphere of election night about the quality of the computer analysis.

Chapter 6 reveals the myriad ways in which Americans in 1952 would have been able to get news of the election before the morning papers hit the streets. This chapter helps us understand how the debut of computers fit into a culture-wide competition for attention on election night.

Chapter 7 details the deployment of both computer and human analysis on election night 1952. The focus of this chapter is primarily on two networks: CBS, for which complete television footage and transcripts of some brief radio segments have been obtained, and NBC, for which complete television footage and several hours of radio

recordings have been obtained. The availability of these resources provides, for the first time, a chance to explore the relative importance placed on people and machines for divining the direction of the vote count at a time when computers were new entrants in the election-night scene. Salient features in the use of computing in these broadcasts include themes of competition and collaboration, risk-taking and caution, and the ever-present theme of electronic brains vs. human brains as a way of coming to terms with the meaning and place of computers in journalism. While computers had been touted in advance as a means to draw in viewers and listeners, they were not given primacy over other traditional election-night methods as the broadcasts played out. The use of computers also provided an opportunity for on-air, ad hoc explorations of what it meant to have machines doing election-night work on turf traditionally reserved for journalists, commentators, and public opinion analysts.

Chapter 8 explores responses to the use of computers on election night in 1952. Although this episode is often portrayed as a publicity coup for UNIVAC, the reality is more complex. Wonder, disappointment, resistance, humor, and the widely deployed motif of man-vs.-machine were among the variety of responses to election-night computer use – for those involved, for other journalists, for the audience, for talk-show hosts, and for celebrities who worked the debut of election-night computing into their radio and television programs. This chapter also explores more extended responses. These included a range of approaches by the three major networks in 1954, one being an overt pullback from computer use at NBC at the same time that a Detroit newspaper was forging new ground for print media in an election-night alliance with the computing laboratory at a local university. Also among the extended responses was the behind-the-

scenes maneuvering of IBM, starting in late 1954, to craft an alliance with a news organization in order to get some of its first-generation electronic commercial computers in on the election-night action in 1956.

Chapter 9 concludes the dissertation by revisiting the questions that prompted it. Given what appears to have been the limited interest in computer analysis as a newsroom tool for so many decades, how do we make sense of the entry of computers into journalism for election-night analysis starting as early as 1952? This dissertation finds that the use of computers on election night was consistent with values and practices dating back to the 19th century. It stresses the importance of cultural factors that underlay both resistance to and embrace of this new technology in journalism. It also highlights the multiplicity of meanings attached to the computer and its deployment at the intersection of the agendas of a variety of players engaged in multi-dimensional competition. Given the early adoption of computers for election-night forecasting, this chapter asks what we can learn by considering whether technological and logistical challenges are sufficient to explain the otherwise slow diffusion of computers as tools for news reporting. It concludes by suggesting the value of this study – and its emphasis on the role of cultural continuity in the face of new technology – for those interested in examining the current era of new technology in journalism.

The Literature

Despite the periodic celebration of computer use on election night 1952 as a sentinel and seminal event, it has not been the subject of much scholarly inquiry. This study greatly expands the range of source materials used to present and understand the

events of that night, and it explores questions not asked before about those events and their historical context. At a time now when important questions have been raised about the relationship between journalism and digital technology, a search of the literature reveals the early history of that relationship to be fertile ground for exploration.

Descriptions of the 1952 episode have appeared in published memoirs by two participants – Herman Lukoff, who was a leading engineer in UNIVAC's development for Remington Rand, and Sig Mickelson, who was director of news and public affairs for CBS television.[45] A description also appears in *Breakthrough to the Computer Age*, a book on early computer history for a general audience.[46] Authored by Harry Wulforst, a former publicist for UNIVAC's manufacturer, this book is commonly cited in other works that mention computer use on election night 1952.[47] The accounts by Wulforst, Mickelson, and Lukoff deal only with the CBS broadcast of the UNIVAC forecasts. They were written decades later – published between 1972 and 1989 – and do not specify the source materials for the election-night stories. The authors would have had access, by virtue of their positions, to at least some relevant documents in personal and company files, and they would have had access to various participants in those events. These

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[45] Lukoff, *From Dits to Bits,* 127-131; Mickelson, *The Electric Mirror,* 80-82; Mickelson, *From Whistle Stop to Sound Bite*, 138-141, 148.

[46] Wulforst, *Breakthrough to the Computer Age*, 161-171.

[47] Wulforst is described on the book's dust jacket as former director of public information for Sperry Univac, a division of the Sperry Corporation, corporate successor to Remington Rand. Wulforst is identified in 1978 as "Manager, Public Relations" on Sperry Univac stationery in a letter he wrote to John Mauchly seeking information for what Wulforst described as "an account I am now writing on the early days of the computer business"; Harry D. Wulforst, letter to Dr. John W. Mauchly, May 12, 1978, Box 5:B:4, Folder 78, John W. Mauchly Papers, Annenberg Rare Book and Manuscript Library (hereafter cited as UP-RBML), University of Pennsylvania, Philadelphia, Pa. Wulforst also appears as the press contact on a Sept. 25, 1979, Sperry Univac news release announcing the death of Herman Lukoff, just three weeks before the scheduled publication of Lukoff's *From Dits to Bits.* At the time, Lukoff was director of technical operations for Sperry Univac; "Herman Lukoff, Computer Pioneer, Dies at 56," Sperry Univac news release, Sept. 25, 1976, Box 1, Folder 35, Herman Lukoff Papers, University Archives and Records Center (hereafter cited as UP-UARC), University of Pennsylvania, Philadelphia, Pa.

accounts do not appear to have made use of broadcast recordings, though Wulforst's

account includes brief excerpts that may have come from a transcription service such as

the one employed by Remington Rand to follow mentions of UNIVAC on air.[48] The

accounts in these books differ from each other in some details of the chronology of

election-night events, and they vary in some details from the sequence of events that can

be seen in recordings of the CBS broadcast.[49] But they have been helpful in providing an

overview of the episode and in suggesting leads for this research project.

The events of election night 1952, focusing mostly on CBS and UNIVAC, were

also the subject of the opening chapter of a master's thesis completed in 1970 by Elmer

Lower after many years as a television news executive.[50] Of interest to Lower was the

debate over whether election-night broadcasting in the computer age – and the projection

of winners before the closing of polls in the West – was having an effect on voter turnout

and the outcome of elections. Lower himself had testified during Congressional hearings

on this subject in 1967 while he was vice president of ABC and president ABC News.

Lower did not appear to have had access to the 1952 broadcast recordings or a large

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[48] The excerpts in Wulforst are close in wording – but with some minor differences and redactions – to partial transcripts that appear among Charles Collingwood's papers at the Wisconsin Historical Society. The times mentioned in Wulforst's account for these excerpts match the times on the partial transcripts, and an examination of the broadcast footage makes clear that these were not the actual times that the quoted remarks were made but rather appear to have been the times of the start of half-hour segments in which the remarks were made. The election-night transcripts in Collingwood's files indicate that they were prepared for Remington Rand. The source is not identified on the election night transcripts, which are marked as carbon copies, but similar transcripts for other dates in Collingwood's files were prepared by Radio Reports, Inc., a transcription service.

[49] The election-night chronology and the conflicts in various accounts will be discussed in Chapter 7.

[50] Elmer W. Lower, "Use of Computers in Projecting Presidential Election Results, 1952-1964 (master's thesis, Columbia University, 1970). An undated copy of Lower's thesis is archived at the Library of American Broadcasting (hereafter referred to as LAB), University of Maryland, College Park, Md. Dale L. Cressman, who completed a biography of Lower as a Ph.D. dissertation, provided the date of Lower's thesis as 1970. Dale L. Cressman, "A Biographical Study of Television News Pioneer Elmer W. Lower" (Ph.D. dissertation, University of Utah, 2003).

number of documents. But his master's thesis has been useful in providing leads for pursuing primary source materials, though some of these have not been possible to locate with the passage of several decades. Lower's thesis also includes useful material from interviews he did in the mid 1960s with two participants in the events of election night 1952.

Facets of the 1952 election-night episode have appeared occasionally in other scholarly works. Drawing on a post-election account in a contemporary trade publication, Thomas W. Bohn included the 1952 computer projections in a 1980 journal article about the evolution of election-night broadcasting in the television age.[51] In a 2008 Ph.D. dissertation, David P. Julyk explored the role of the computer as an icon reflecting anxieties over automation and technological unemployment in American culture after World War II.[52] Julyk's opening chapter analyzed the language used to describe early computers in newspapers and magazines, including news stories about election night 1952. He also included excerpts from a 2003 telephone interview with Walter Cronkite, who recalled perceiving the computer analysis both as a gimmick and as an invader of journalistic turf – and had a memory of taking some pleasure in UNIVAC's election-night troubles.[53] Election night 1952 has also made cameo appearances in other academic works dealing with the history of computing.[54] These typically depend on accounts limited to the outlines of the UNIVAC role on CBS.

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[51] Thomas W. Bohn, "Broadcasting National Election Returns, 1952-1976," *Journal of Communication* 30, no. 4 (1980): 141-153.

[52] See Julyk, "'The Trouble With Machines Is People.'…"

[53] Ibid., 40, 63-64.

[54] Martin, for example, briefly cited the 1952 UNIVAC role on CBS in an article arguing that the press shaped early public opinion about computers in misleading, anthropomorphic ways as "awesome thinking

A thorough history of the early years of the use of computers as tools for news reporting has yet to be written. An overview is provided by Margaret H. DeFleur as background for her study of contemporary practices employed in computer analysis for investigative reporting.[55] Philip Meyer, an early advocate of the use of computer analysis in journalism, included examples of his and other's efforts in the late 1960s and early 1970s in a 1973 volume, *Precision Journalism: A Reporter's Introduction to Social Science Methods*, and three subsequent editions.[56] Meyer was instrumental in producing a 1967 analysis of survey data following the Detroit riots that year, a key element in coverage that won the *Detroit Free Press* a Pulitzer Prize. Scott Maier has written a detailed account of an another landmark event in the history of computer analysis as a reporting tool – the 1968 *Miami Herald* series on crime in Dade County, Florida.[57] The newspaper's Herculean reporting effort involved transferring information about court cases onto 13,000 computer punch cards, and according to Maier it is the first example of journalists using a computer to analyze government records. While the newspaper touted its pioneering achievement at the time, Maier also concluded the *Herald* staff had to

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machines"; Martin, "The Myth of the Awesome Thinking Machine," 120-133. Winston cites election night 1952 – again, just the CBS-UNIVAC episode – in the course of making an argument about the "suppression" of the "radical potential" of computers in the 1950s; Winston, *Media Technology and Society,*193-194.

[55] DeFleur, *Computer-Assisted Investigative Reporting,* 36-45, 74-92. DeFleur cites election night 1952 as marking the entry of computers into the newsroom, with an account (pp. 36-39) of the UNIVAC role on CBS that is drawn from Wulforst, *Breakthrough to the Computer Age.*

[56] Philip Meyer, *Precision Journalism: A Reporter's Introduction to Social Science Methods* (Bloomington, Ind.: Indiana University Press, 1973). Three later editions were published as: *Precision Journalism: A Reporter's Introduction to Social Science Methods*, 2nd ed. (Bloomington, Ind.: Indiana University Press, 1979); *The New Precision Journalism* (Bloomington, Ind.: Indiana University Press, 1991); and *Precision Journalism: A Reporter's Introduction to Social Science Methods.* 4th ed. (Lanham, Md.: Rowman & Littlefield Publishers, Inc., 2002).

[57] See Scott R. Maier, "The Digital Watchdog's First Byte: Journalism's First Computer Analysis of Public Records," *American Journalism* 17, no. 4 (Fall 2000): 75-91.

overcome substantial technical and logistical barriers. Understanding this, he argues,

provides "perspective to the slow and faltering advance of computer-assisted

reporting."[58]

As for the larger history of journalism and technology, while each field has its

own body of scholarship, their intersection has received only limited attention from

scholars, according to a recent book exploring the literature and themes in the technology

of journalism.[59] The author, Patricia L. Dooley, also concludes that the field of

journalism history has long had what she describes as a "bias that favors technology as a

driving force behind changes in news."[60] In another recent overview of journalism

historiography, Chris Daly identifies an approach in many works that he terms the

"Technological Imperative."[61] This approach to the past, he writes, "holds that history is

propelled by inventors."[62] Works that see technology as a force shaping journalism – an

approach generally referred to as technological determinism – are not hard to find.[63] But

this way of framing the relationship between technology and journalism is also not

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[58] Ibid.

[59] Dooley, *The Technology of Journalism*, 3.

[60] Ibid.

[61] Chris Daly, "The Historiography of Journalism History: Part 1: 'An Overview,'" *American Journalism 26*, no. 1 (Winter 2009): 141-147.

[62] Ibid, 144.

[63] For example, in an article titled, "The Impact of Technology on Journalism" (*Journalism Studies* 1, no. 2 (2000): 228-237), John Pavlik introduces his classification of effects this way: "Journalism has always been shaped by technology. Since Julius Caesar ordered the *Acta Diurna* in AD 59, distributing information about the important events of the day has been enabled, if not often driven, by technological advances." In *Lessons from the Past: Journalists' Lives and Work, 1850-1950* (Prospect Heights, Ill.: Waveland Press, 2000), Fred Fedler introduces a chapter on "Mechanical Inventions" (pp. 137-153) this way: "By the mid-1800s, mechanical innovations were beginning to revolutionize newsrooms, changing the way journalists handled every story and transforming newspapers' appearance, content, techniques and location. The innovations affected journalists in a multitude of ways: some expected, some unexpected, some helpful, and some harmful."

universal. Three examples of an alternate approach will serve to provide context for the

argument in this dissertation about the importance of paying attention to those parts of the

past that have staying power in the face of new technology. Donald Lewis Shaw's

analysis of more than 3,000 American newspaper stories from 1820 to 1860 explored the

conventional wisdom that, among other things, the telegraph brought about changes in

styles of reporting and writing news stories and in their content.[64] While that period did

see change – including the increasing use of reporters to gather news, more timely reports

of news, and more attention to locally-generated news – Shaw found continuity in other

important features of newspapers as a group. These included continuity in the general

types of stories covered and the style in which those stories were written. Kevin G.

Barnhurst and John Nerone's history of the "form" of news explores conventional

wisdom about other changes.[65] These include the eventual disappearance of illustrated

news in the era of photography and talk of a "design revolution" for newspapers in the

1970s and 1980s. Barnhurst and Nerone conclude that neither set of changes was dictated

by the arrival of new technologies, reflecting instead other factors and trends that had

been developing in some cases for decades. Lastly, a study by Pablo J. Boczkowski of

innovation in online newspapers stresses the importance of "existing social and material

infrastructures" as well as "broader contextual trends." [66] Too much emphasis, he writes,

has been placed on "analyses that underscore the revolutionary character of online

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[64] Donald Lewis Shaw, "At the Crossroads: Change and Continuity in American Press News 1820-1860," *Journalism History* 8, no. 2 (Summer 1981): 38-50.

[65] For a full discussion, see Kevin G. Barnhurst and John Nerone, *The Form of News: A History* (New York: The Guilford Press, 2001).

[66] Pablo J. Boczkowski, *Digitizing the News: Innovation in Online Newspapers* (Cambridge: The MIT Press, 2004), 4.

technologies and the web and overlook the more evolutionary ways in which people often incorporate new artifacts into their lives."[67]

Aside from differences of opinion in academia about framing the relationship between technology and journalism, the tendency to ascribe a mostly one-way impact to technology – as a force that changes what it encounters – is not a foreign concept in day-to-day speech, popular culture, or even works of scholarship on a range of subjects.[68] An alternative approach to this relationship between technology and journalism – the one taken here – is to avoid the assumption that once computers came along, they would inevitably find their way into journalism and act on journalism as an inevitable agent of change. Questions that arise from resisting this assumption include asking what factors set the stage for computers' entry into journalism and why election night in 1952 became a venue for this entry. These questions have not been the subject of much scholarly speculation – and none based on a close examination of relevant primary source materials. This study looks for context in the historical role of election night within journalism and American culture at large before 1952.

The history of election night over time – especially in the period up to and including the 1950s – has been little plumbed in scholarly research as a special cultural and journalistic phenomenon. But there are some exceptions worth noting that support

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[67] Ibid., 2.

[68] For example, a search of Google Scholar (on Dec. 6, 2009) for the phrase "impact **of** new technology" returns results indicating its use in thousands of works in English. A search for the phrase "impact **on** new technology" returns fewer than 50 articles in English. The numbers cannot be known precisely – Google Scholar does not display more than the first thousand results, while estimating in this case about 4,700 hits for the first search. And the comparative searches are a crude instrument at best. But they suggest a disparity that can also be observed in day-to-day discourse.

the idea of election night as a rich area of study for journalism historians and cultural scholars.

In 1967, John M. Matheson, a doctoral student at Southern Illinois University, went in search of the extant literature on the history of news coverage of election returns. He did not find any, and his own dissertation has since become a seminal contribution to this area of journalism history. [69] The seemingly narrow focus captured in his title – *Steam Packet to Magic Lantern: A History of Election-Returns Coverage in Newspapers of Four Illinois Cities, 1836-1928* – belies the value of his research. Matheson demonstrated that the study of election coverage over time can provide a window into evolving journalistic values and practices as well as evolving national infrastructures in transportation, communication, and settlement.

The following year, 1968, a journal article that resulted from work done at Bowling Green State University by another doctoral student, Thomas W. Bohn, surveyed the history of radio and television broadcasting of returns in presidential elections from 1916 to 1948. [70] Working primarily from accounts in the *New York Times* and a trade magazine, *Broadcasting*, Bohn argued that election-night reporting provided what he calls a "testing ground" for radio broadcasting, and that election-night practices took decades to evolve into full-time, hard-news coverage featuring interpretation and analysis.   This evolution coincided with a slow realization that the listening public would be receptive to such broadcasts, and it coincided, as well, with an increasing ability over

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[69] John M. Matheson, "Steam Packet to Magic Lantern: A History of Election-Returns Coverage in Newspapers of Four Illinois Cities, 1836-1928" (Ph.D. diss., Southern Illinois University, Carbondale, 1967).

[70] See Thomas W. Bohn, "Broadcasting National Election Returns: 1916-1948," *Journal of Broadcasting* 12, no. 3 (1968): 267-86.

that time to gather and aggregate voting results. Bohn would follow up on this study in 1980, as noted earlier, by extending his focus to the election-night broadcasting of presidential election returns from 1952 to 1976.[71] Bohn observed that along with constant innovation and adaptation to changing conditions, there remained a durable, ritualistic structure to that coverage.

In 1983, Michael A. Russo completed a Ph.D. dissertation at New York University that used several decades of election coverage to help trace the development in broadcast journalism of special-events coverage as an important feature of broadcast news operations as well as American political culture.[72] Himself a former television journalist, Russo focused on the creation and evolution of the special events and election units at CBS between 1952 – with attention to the network's coverage of the political conventions in that year – and 1968. Russo succeeded in obtaining access to closely held CBS records in this period.

In 1991, Kate Kelly, a freelance writer, produced *Election Day: An American Holiday, and American History*. This is an anecdotal account for a popular audience of the history of voting, election reporting, and election-day celebrations and traditions from the colonial era to the late 1980s.[73] Not intended to make a historical argument, the volume illustrates the richness of election day in American culture over time.

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[71] See Thomas W. Bohn, "Broadcasting National Election Returns, 1952-1976," *Journal of Communication* 30, no. 4 (1980): 140-153.

[72] See Michael Anthony Russo, "CBS and the American Political Experience: A History of the CBS News Special Events and Election Units, 1852-1968" (Ph.D. diss., New York University, 1983).

[73] See Kate Kelly, *Election Day: An American Holiday, an American History* (New York: Facts on File, 1991).

In a volume published in 1998, *Calling Elections: The History of Horse-Race Journalism,* Thomas B. Littlewood showed how the history of reporting on campaigns and voting exposes an underlying tension in political journalism between the coverage of issues and the coverage of contests.[74] Working from contemporary news accounts, memoirs, and secondary sources, Littlewood explored the evolution since the early 19th century of a reporting style that treats elections as sporting events.

In yet another dissertation, *The History of Election Day in Philadelphia: A Study in American Political Ritual*, completed at the University of Pennsylvania in 2002, a study by Mark W. Brewin ranges from the early 18th century to the elections of 2000. Brewin was interested in changes that took place over time in American political culture and in the rituals of public life. He traced the development election day as a public celebration. And with the arrival of mass media – and in particular television – he documented a decline in that tradition, a development he argues is a "significant loss for democratic life."[75] The dissertation has since been expanded into a book, *Celebrating Democracy*, published in 2008.[76]

Of the group of scholarly works, those by Matheson and Brewin stand out as providing rare and valuable studies from primary source materials of the culture of election day and the reporting of election returns during an extended period of American history preceding 1952 – that is, during the period on which I have focused in exploring

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[74] See Thomas B. Littlewood, *Calling Elections: The History of Horse-Race Journalism* (Notre Dame: The University of Notre Dame Press, 1998).

[75] See Mark W. Brewin, *The History of Election Day in Philadelphia: A Study in American Political Ritual*, Ph.D. Dissertation , The University of Pennsylvania (Philadelphia, 2002). p. v.

[76] See Mark W. Brewin, *Celebrating Democracy: The Mass-Mediated Ritual of Election Day* (New York, Peter Lang, 2008).

the theme of cultural continuity.   Each of these has a local focus – four Illinois cities in the case of Matheson, and Philadelphia in the case of Brewin. For understanding the period leading up to 1952, the studies by Littlewood and Bohn also stand out as useful works of synthesis – focusing on radio and television broadcasting, primarily via New York-based networks, in the case of Bohn, and casting a wider net in space, time, and medium in the case of Littlewood. Discovery of the works of these scholars as I continued to expand the focus of my own literature search was especially useful in helping me get a sense of the wider historical terrain on which election night played out. Lower's thesis, Russo's dissertation, and Bohn's second study were also helpful in getting a longitudinal look at events that came after 1952 in network broadcasting of election returns.

In addition to these works focused on election day, election night, and the reporting of election returns over time, there are two other sets of works that are worth mentioning here. Among the most useful of these are Carolyn Marvin's explorations of the way Americans saw the possibilities for electric communication and electric light as a communication medium during the 19th century. [77] Before radio, election results were communicated to news consumers at a distance, in public and private settings, by searchlight and telephone. Published in 1986 and 1988, Marvin's studies argue that past experiments with new technology and past conceptions of the future of those technologies are useful for understanding the social process of navigating change. The latter of these works, *When Old Technologies Were New,* is regarded as a seminal study

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[77] Carolyn Marvin. *When Old Technologies Were New: Thinking About Electric Communication in the Late Nineteenth Century* (New York: Oxford University Press, 1988), 186, 216-222; and Carolyn Marvin, "Dazzling the Multitude: Imagining the Electric Light As a Communication Medium," in *Imagining Tomorrow: History, Technology, and the American Future*, ed. Joseph J. Corn, ed. (Cambridge, Mass.: The MIT Press, 1986), 202-217.

in the intersecting histories of technology and culture. Just as Bohn argued that election-night reporting was important to the development of radio news in the first half of the 20th century, Marvin argued that elections provided the impetus for a high degree of organization in the use of new electric technologies – especially the telephone and the electric light: "The distribution of presidential election returns in the late 19th century," she wrote, "was the most ambitiously organized American effort to use new electric technologies to deliver the news."[78]

Other studies have approached the phenomenon of election night from a variety of directions, typically focusing on a discrete aspect or time frame. Nineteenth century election-night bonfires have been a subject of study.[79] So has the history of organized markets for betting on the outcome of presidential elections between 1868 and 1940 – and their usual accuracy in forecasting the winners.[80] Scholarly studies of election-night reporting after the 1950s have tended to focus on one or a small number of elections, addressing questions dealing with bias, accuracy, methodologies of forecasting, and the ritualistic aspects of election-night reporting. One study published in 1988, for example, examined election-night journalism as political ritual, focusing on the period from 1982 to 1984 and arguing that television commentators tended to offer "broad symbolic reassurance" after the divisiveness of a campaign by stressing the importance of common

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[78] Marvin, *When Old Technologies Were New*, 217.

[79] Mark Brewin, "The History and Meaning of the Election Night Bonfire," *Atlantic Journal of Communication* 15, no. 2 (2007): 153-169.

[80] Paul W. Rhode and Koleman S. Strumpf, "Historical Presidential Betting Markets," *Journal of Economic Perspectives* 18, no. 2 (Spring 2004): 127-142.

participation in the process.[81] Election night is discussed in works on statistical methods

for the study of politics and public policy.[82] One other area of great interest in connection

with election-night journalism has been the question Elmer Lower addressed in his 1970

master's thesis – whether the reporting of election returns before the polls have closed in

some areas, especially the West Coast, affects voter turnout and election outcomes.[83] This

question is not just of importance to historians. It has been a point of periodic

controversy, and it has been investigated on a number of occasions by Congress.[84]

Theory – Technology and Change

How do we account for change in the technologies people use and the way people

use them, whether as individuals or as members of a large social system, a profession, an

organization, or some other configuration? To be sure, people have a fascination with

what is new and what is strange. Novelty attracts attention. It provokes amazement and

fear. It is often an essential element to what we find entertaining. It is also fundamental to

our survival.[85] Through recorded history, the powerful have sought to enhance their

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[81] Marc Howard Ross and Richard Joslyn, "Election Night News Coverage as Political Ritual," *Polity* 21, 21, no. 2 (Winter 1988): 301-319.

[82] See, for example, "Election-Night Forecasting" (pp. 40-46) in Edward R. Tufte, *Data Analysis for Politics and Policy* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1974).

[83] Books dealing with this subject, for example, include: Kurt Lang and Gladys Engel Lang, *Politics and Television* (Chicago: Quadrangle Books, 1968); Percy H. Tannenbaum and Leslie J. Kostric, *Turned-On TV / Turned-Off Voters* (Beverly Hills: SAGE Publications, 1983); and William C. Adams, *Election Night News and Voter Turnout: Solving the Projection Puzzle* (Boulder, Colo.: Lynne Rienner Publishers, 2005). Many articles in academic publications and the popular press have also explored this issue.

[84] In *Election Night News and Voter Turnout,* Adams (p. 9) reports: "Projections have invariably prompted complaints, but those in 1964, 1980, 1984, and 2000 generated the most controversy, congressional hearings and newspaper articles." The bibliography in this dissertation includes several citations for such hearings.

[85] In his exploration of novelty in a study of the invention and development of the zipper, Robert Friedel writes that "the pursuit of novelty and its successful integration into life are the central means by which we

prestige and authority by patronizing inventors and scientists exploring what is novel by

working at the boundary between utility and wonder. And chief among the creations that

astound over time have been automata and their successors – devices that imitate life,

from the mechanical creatures of ancient times to the latest 21st century robots. Certainly,

the "electronic brains," as computers were known early on, were in a category of

novelties that astounded for their purported ability to do what was once thought of as the

work of a purely human domain.[86]

It is equally true that we do not automatically embrace novelty, especially when

faced with a choice or possibility of a new technology being employed in our personal,

social, or work lives. That which holds the potential to bring improvement in some way

and for some parties may also threaten existing interests, diminish the value of expertise

in older arrangements, and disrupt hierarchies of formal or informal authority.[87] And as

noted earlier, the deterministic view that technology exists as an agent with a primarily

one-way impact on people and social systems can become problematic when the nature

and trajectory of change are examined closely.

This dissertation focuses on an era of new technology more than a half century

ago and on what happened then in the face of choices for bringing together computers

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cope with being human"; Robert Friedel, *Zipper: An Exploration in Novelty* (New York: W. W. Norton & Company, Inc., 1994), 254.

[86] For a discussion of intersection "utilitarian" and "ornamental" value of science and scientists for patrons in the early years of the Scientific Revolution, for example, see Paul A. David, "From Keeping 'Nature's Secrets' to the Institutionalization of 'Open Science,'" in *CODE: Collaborative Ownership and the Digital Economy*, Rishab Aiyer Ghosh, ed. (Cambridge, MA: MIT Press, 2005), 85-112. For discussions of automata – both mythical and constructed – and their incarnations in the computer age, see Steven Lubar, *InfoCulture: The Smithsonian Book of Information Age Inventions* (Boston: Houghton Mifflin Company, 1993), 377-398.

[87] See, for example, Merritt Roe Smith's classic study of resistance to technological change among workers at the U.S. Armory in Harpers Ferry, Virginia, during the decades leading up to the Civil War, in *Harpers Ferry Armory and the New Technology: The Challenge of Change* (Ithaca: Cornell University, 1977).

and journalism. I do not propose to offer new theory that derives from this episode, with explanatory and predictive power for past, present, or future events. But I do see this study as making a contribution in two ways to the conversation about the relationship between technological innovation and change, both in journalism and more generally. After taking note here of approaches from two distinct fields that are concerned with this relationship – one being the study of the diffusion of innovations and the other being the study of the history of technology – I will outline the ways in which themes that are salient in my study of the early use of computers as tools for news reporting may also serve as useful aids to observation in studying other episodes of the introduction of new technologies in journalism and other endeavors.

During my initial exploration of the historical events that are the subject of this study, I began to question the notion that the overriding nature of these events was revolutionary. They were revolutionary, to be sure. A powerful new technology, the electronic computer, was introduced into the mix for analyzing election returns, and another powerful new technology, television, was making its mark as an important means for distributing breaking news of the election and linking the nation in a new, visual way. But I also came to see that to focus primarily on the revolutionary aspects would be to run the risk of missing another set of elements critical to understanding what was taking place.

Among the many analytical frameworks that could be applied to thinking about the early use of computers in election-night journalism, there are two approaches recognizing the nature and importance of the continuity that might be found in the midst of change. One of these approaches comes from the field of communications research and

deals with the diffusion of innovations.[88] In diffusion studies – chronicled and synthesized over several decades by Everett Rogers – an "innovation" is seen as "an idea, practice or object that is perceived as new by an individual or other unit of adoption."[89] The innovation need not be new in a chronological sense, starting from the point of invention. What makes the diffusion of an innovation worthy of study is the *perception* of newness – that it is new to the person or group to which it is introduced. The general model for the diffusion of innovations suggests five key dimensions for assessing the characteristics of an innovation in understanding its capacity for adoption. These go by the terms "relative advantage," "compatibility," "complexity," "trialability," and "observability."[90] In other words: What sort of improvement does an innovation offer? How is it consistent with current practices and values? How difficult is it to deploy and use? Can it be tried without with a large commitment of resources and risk? And can it be seen in action before being adopted? The notion here of "compatibility," in particular, recognizes that novelty in one aspect of an innovation does not imply novelty in all aspects – and that, in fact, continuity with what already exists is actually vital to the process of change.

A second general theoretical framework relevant to this dissertation stems from a critique of technological determinism and attends to the ways in which technologies and their trajectories are shaped as a social process. This framework encompasses several

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[88] The latest overview of the field of diffusion research is Everett M. Rogers, *The Diffusion of Innovations*, 5th ed. (New York: Free Press, 2003). Starting with the first edition in 1962, Rogers sought to extract generalizations from an analysis of an area of scholarship that included hundreds and later thousands of diffusions studies.

[89] Rogers, *Diffusion of Innovations*, 12.

[90] These are discussed in detail in Rogers, *Diffusion of Innovations*, 219-266.

approaches that have both theoretical and methodological dimensions, including the

social construction of technology, or social constructivism. [91] Works in this vein tend to

argue that new technologies do not stand apart as forces with inevitable trajectories and

one-way impacts on society and culture, or with fixed meanings and uses. Instead,

technologies are said to exist in a state referred to by some historians as involving

"interpretative flexibility." [92] The needs, desires, and actions of users – along with the

practices and values already prevalent in their various cultures – have effects on the

design, deployment, modification, and perceived meanings and significance of

technological innovations. Like the process it posits for technology, this theoretical

framework does not itself represent a single and immutable model. It has been adopted

and adapted to a variety of studies and proposed configurations, and it has a number of

variants and related approaches. Still, the authors of an edited volume on the social

shaping of technology, Donald MacKenzie and Judy Wajcman, noted that while the

general idea of the "social shaping of technology" had become accepted in academia, it

had achieved "little resonance in our wider culture." [93] Arguing for the relevance of

continuing to publish works offering an alternative to the one-way view of technology's

impact on society, they observed that "discussion of technology in the mass media … is

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[91] Collections of essays exploring both the common themes and variations in these approaches to the study of technology include: Wiebe E. Bijker, Thomas P. Hughes, and Trevor J. Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (Cambridge, Mass.: MIT Press, 1987); Donald MacKenzie and Judy Wacjman, eds., *The Social Shaping of Technology*, 2nd ed. (Philadelphia: The Open University Press, 1999); Wiebe E. Bijker and John Law, *Shaping Technology / Building Society: Studies in Sociotechnical Change* (Cambridge, Mass.: MIT Press, 1992).

[92] See, for example, Trevor Pinch and Wiebe E. Bijker, "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other," in *The Social Construction of Technological Systems*, Bijker et al., eds., 40-41.

[93] MacKenzie Wacjman, eds., *The Social Shaping of Technology*, xv.

still framed in largely technologically deterministic terms."[94] The editors of another

volume on the history of technological visions argue that beyond merely limiting public

understanding of the forces affecting the shape and trajectory of new technologies,

viewing technology in a deterministic way – and robbed of historical context – can have

deleterious effects on decision-making and public policy.[95]

Studies in the diffusion-of-innovations tradition have also taken cognizance of the

processes posited for the social shaping of technology. Rogers, the chronicler of diffusion

studies, argued that since the diffusion of innovations is a social process, the "meaning of

an innovation is thus gradually worked out through a process of social construction."[96] In

Rogers's summary of diffusion studies, he noted the social-construction-like phenomenon

of "re-invention," which he defined as "the degree to which an innovation is changed or

modified by a user in the process of its adoption and implementation."[97] Rogers reported

that until about 1970s, this phenomenon was not seen by scholars as significant, with

adopters treated as "rather passive acceptors of an innovation, rather than active

modifiers of a new idea."[98] Still, the more nuanced view of adopters does not appear to

have taken hold universally. Diffusion scholars James W. Dearing and Gary Meyer, in a

recent assessment of the work in their field, called for greater attention to the idea of

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[94] Ibid.

[95] Marita Sturken and Douglas Thomas, "Introduction: Technological Visions and the Rhetoric of the New," in *Technological Visions: The Hopes and Fears that Shape New Technologies*, eds. Marita Sturken, Douglas Thomas, and Sandra J. Ball-Rokeach (Philadelphia: Temple University Press, 2004), 1-18.

[96] Rogers, *Diffusion of Innovations*, xxi.

[97] Ibid., 180-188.

[98] Ibid., 180.

adopters as "creators of innovations." [99] They found in their review of the literature that

"activity of this sort has usually been considered deviant or minor in relation to the

original source-defined purpose of an innovation and how it was designed by that

source."[100] Dearing and Meyer argue that "adopter activity in relation to innovations is

far more important, common, and consequential than reflected in the diffusion

literature."[101] Whereas traditional diffusion theory tends to "decouple" the process of

innovation from the process of diffusion, Dearing and Meyer propose a theoretical

perspective that "closely weds the two."[102] This suggests that in addition to the

shortcomings of viewing technology in a purely deterministic way, there remain

promising opportunities for examining potential users' relationship with new technology

as more than a pair of distinct choices – to adopt or not.

      The work of Claude Fischer in exploring the early decades of the telephone as a

commercial technology has been especially useful in thinking about the subject of this

dissertation.[103] Fischer emphasizes the importance of examining technology from the

perspective of the user – terming his approach the "user heuristic," with "heuristic"

meaning an "instructive tool for thinking about technology."[104] He writes: "We need to

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[99] James W. Dearing and Gary Meyer, "Revisiting Diffusion Theory," in *Communication of Innovations: A Journey with Ev Rogers*, eds. Arvind Singhal and James W. Dearing (Thousand Oaks, Calif.: SAGE Publications, 2006), 30-31.

[100] Ibid, 44.

[101] Ibid.

[102] Ibid., 31.

[103] Claude S. Fischer, *America Calling: A Social History of the Telephone to 1940* (Berkeley: University of California Press, 1992); Fischer also provides an overview (pp. 6-21) of determinism, social constructivism, and various other theoretical approaches to the relationship between technology and society to distinguish them from his own approach.

[104] Ibid., 19.

study how specific devices were introduced and adopted, what people used them for, how

that use changed as the technology evolved, how those uses altered other actions, how

patterns of use changed the context for other actors, and so on."[105] His study of the

telephone, for example, reveals that its use for social interaction was not a role envisioned

in the original marketing of the telephone as a tool to serve practical ends. Unexpected

uses came from customers who adopted the telephone for extending and enhancing their

own social connections, practices, and needs, including women at home and residents of

rural areas.[106] Summarizing his findings, he writes:

> … while a material change as fundamental as the telephone alters the
> conditions of daily life, it does not determine the basic character of that
> life… As much as people adapt their lives to the changed circumstances
> created by a new technology, they also adapt that technology to their lives.
> The telephone did not radically alter American ways of life; rather,
> Americans used it to more vigorously pursue their characteristic ways of
> life.[107]

This dissertation confirms the value of taking a user-eye-view of new technology

and understanding the dynamics in which users may adopt and adapt new technologies

for their own ends. A close look at the practices and values at work in election-night

journalism before 1952 will reveal a great deal of continuity from that pre-history to the

ways computers were first employed for election-night coverage. These include, among

other things, a multidimensional treatment of computing equipment where it was used –

its deployment for calculation and analysis, but also as a prop in the long tradition of

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[105] Ibid., 20.

[106] Ibid.*; see pp. 75ff for discussion of marketing for practicality vs. sociability; see pp. 92 ff on the unanticipated demand for telephones in rural areas.

[107] Ibid., 5.

45

election-night showmanship, with some commentators even making use of the computers' limitations as a foil.

Several notions – that what a technology *means* is important, that a single technology can have multiple meanings, and that these multiple meanings can play a role in the way that technology is received and deployed – are among the points of intersection in the diffusion and social constructivist approaches.[108] As a result, understanding the responses to new technology involves far more than seeing that technology and its associated practices solely or primarily as a cluster of features with technical utility. As we will see in the circumstances surrounding the early deployment of computing in journalism, what might be called the "nontechnological" aspects of a technological innovation are also vital to understanding the choices about whether and how to make use of it.

One particular kind of connection between technology and meaning is what historian David Nye has termed the "American technological sublime."[109] The sublime involves, in general, "experiences of awe and wonder, often tinged with an element of terror."[110] It is a concept with roots in antiquity, taken up and explored in the 18th century by Edmund Burke and Immanuel Kant, and traditionally associated with ineffable, religious-like feelings about awesome structures and events in the natural world – an immense canyon or waterfall, a volcanic eruption, a storm at sea. Nye has established the sublime as a useful concept in understanding Americans' responses to new technology.

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[108] These notions are not limed to the work of scholars explicitly affiliated with either the diffusion or social construction approach; see, for example, Arnold Pacey, *Meaning in Technology* (Cambridge, Mass.: The MIT Press, 2001 [1999]).

[109] David E. Nye, *American Technological Sublime* (Cambridge: The MIT Press, 1994).

[110] Ibid., xvi.

From the early 19th century forward, he has argued, the technological sublime has been "one of America's central 'ideas about itself.' "[111] Independence Day, the diverse nation's celebration of its unity, has served repeatedly as a venue for the technological sublime. Nye has found that celebrations of the national holiday were intertwined with the celebration and inauguration of canals, railroads, and bridges.[112] Bold and spectacular new technologies have also had value in American culture as magnets to draw crowds – on Independence Day and other occasions – and have even become tourist attractions on their own, from the 19th-century establishment of rail and telegraph systems to late 20th-century launches of manned space flights.

This dissertation argues that election night can also be recognized as a type of cultural event which, over time, has been associated with celebrations of the wonders of new technology. Inherent in this mix is the capacity of the new technology – in the case of this study, the computer – to have a variety of meanings and uses, technical and nontechnical, to players who come from different fields of endeavor – in this case, journalists and technologists – but who have intersecting agendas associated with a desire to attract and command attention – in this case, driven by an awareness of the natural public interest in the outcome of elections.

In my study of election night 1952, I have taken note of a series of themes that are important to understanding the dynamics associated with decisions about the deployment a new technology, the computer. These themes include the collaboration of groups from different fields but with intersecting agendas for public respect and competitive

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[111] Ibid., xiii-xiv.

[112] Ibid., 41-43.

advantage – enhanced by the capacity of a single artifact to carry multiple meanings – all playing out in connection with the election of a president, an event of special significance in journalism and widespread interest in the culture at large. In addition to the continuity with past election-night practices both for analyzing returns and attracting attention in the journalistic world, there was also some measure of continuity for the nascent computer industry with its penchant for showy demonstrations of wondrous new wares. It would appear, then, that although the new "electronic brains" were not uniformly seen among journalists as natural, desirable, or practical additions to the newsroom's human brains, the momentum provided by many factors taken together was sufficient to open the door to experimentation. And yet, as an exploration of the aftermath of election night will make clear, the future of computers as an election-night fixture was not a done deal after 1952. The experiments alone did not bring about immediate and revolutionary change. They did increase awareness, both of possibilities and risks.

I do not mean to suggest that the themes explored here are the only factors needed to understand the early deployment of computers in election-night journalism. In his study of meaning in technology, Arnold Pacey warns against the kind of "reductionism" that would associate a cause-and-effect understanding of the history of technology with a simple set of factors. "There is no 'only' about it," he writes. "The dynamic of technological change seems to reflect a synergy among psychological, institutional, and socioeconomic movements. It is a mistake to assume that any one part of the complex interaction is the key to it all."[113] I do not mean to suggest, either, that a singe case study

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[113] Pacey, *Meaning in Technology*, 9.

provides adequate evidence to support a new direction in theory for understanding the dynamics of change in the relationship between technology and journalism.

Rather, I would propose that what I have detected here raises the possibilities for a set of factors at work in 1952 that could serve as an aid to observation – supplementing the factors posed by existing theory – in the exploration of other modern encounters with technology in journalism. There are seven factors or themes that I would like to articulate here, and I will return to them at various points in this study:

(1). <u>Cultural continuity:</u> The question of the compatibility of computer analysis with the existing patterns of election-night reporting is one that yields not a single answer but a range of possibilities, from those intrigued enough to experiment with it to those who had a hard time seeing election-night analysis as anything other than a human domain, peopled by journalists, public opinion pollsters, and political scientists. In 1952, as we will see, what was significant in the deployment of computers on election night was continuity with patterns of election-night journalism in many dimensions. This included the need to aggregate and make sense of the numbers, the imperative of balancing accuracy and speed in projecting a winner, and the methodology of making specific comparisons to past results – by discrete geographic areas – to detect variation from past trends. But it also included the showcasing of wonders and novelty – including technological innovation – as part of the journalistic enterprise of commanding and holding attention, which in turn offered bragging rights serving much more than bottom-line profit interests. The new had a variety of connections to the old in a number of dimensions. What was revolutionary rested on a solid foundation of cultural continuity.

Many of these lines of continuity have extended into election-night journalism in the 21st century.

(2). <u>An event of significance:</u> That election night in 1952 became a venue for several linkages of computing and journalism suggests the importance attending to the social and cultural context of such combinations – and to the specific kinds of newsworthy events around which they might take place. The 1952 election presented an occasion in which public interest was guaranteed, but it was an occasion in which no particular news organization was guaranteed a share of that interest. The role of election night as an event of great cultural and social significance is certainly underappreciated in the scholarly literature, but it may also be part of a class of situations for the debut of technological innovation that is worthy of further exploration in both diffusion and social constructivist studies.

(3). <u>Collaboration with outsiders</u>: In both diffusion and social construction, the focus would typically be on an innovation that originates in one sphere and then is adopted and adapted in others, as with the movement of a technology from inventors to marketers to users. The events of election night 1952 suggest the possibilities for a more nuanced exploration of the movement of innovations across group or disciplinary boundaries. The technology was deployed jointly in a new way for each party, each coming from quite different domains – that is, technology and journalism – but each perceiving the benefit of working together toward a common end. This was not simply diffusion of a tool from the realm of engineers to the realm of journalists. For each, the use and its outcome became learning experiences, and that fed back into their sense of possibilities in their own sphere of operations.

(4). <u>Managing complexity:</u> It would be easy to assume that the rise in computer use for analysis in reporting which came decades after 1952 was a result of the technology becoming more ubiquitous, with greater availability and lower cost driving innovation in applications of database analysis to news reporting. Aside from the inherent determinism in this view, it may mask a more interesting possibility: that the greater availability of possibilities for computer analysis allowed for a change in the locus of innovation and the management of this practice. Later, small newsroom units and individual reporters could take the initiative to experiment with this sort of analysis for various kinds of stories without the imperative of organizational buy-in and outside collaboration.[114] But in 1952, the exploration of computing as a tool for journalism was facilitated by action at the organizational level and collaboration with outside organizations. The complexity of computing was certainly a challenge, but it was not a barrier, and such collaboration – fueled by the perception of mutual gain in connection with an event of great public interest – was a way to manage that complexity.

(5). <u>Journalism as a special case:</u> In the 1952 application of computing on election night, not only did the tool have the capacity to serve journalism, but journalism (and the exposure it entailed) had the capacity to serve the tool – and not only on election night, but afterwards. Remington Rand, in particular, wasted no time in creating detailed descriptions and wondrous narratives of its election-night exploits. Monroe used references to election night 1952 in booklets it prepared to seek government and military contracts. And IBM, though not as active as Remington Rand in touting its election-night

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[114] I observed this first-hand during the late 1980s and early to mid 1990s while working as a reporter at *The Providence Journal* in Providence, Rhode Island, and attending national journalism conferences at which reporters compared notes about their exploring computers for the analysis of government records.

contributions, nevertheless called attention to its role with accounts in an in-house publication and in a newsletter that circulated in the data-processing world. This suggests, at the very least, an opportunity for further exploration: the application of technological innovation in journalism as a form of diffusion with special features.

(6). Critical mass vs. resistance: It is not a new idea that innovation brings the opportunity both for improvement and disruption. Computing technology, in particular, gets to the heart of what is thought to be most human – the capacity to analyze and predict – and thus what is most essential to the way at least some journalists might see themselves. How, then, does the decision to use the technology overcome resistance? In 1952, an important factor was the capacity of the technology to encompass multiple meanings and multiple roles – to have both technological and nontechnological applications, both utility and symbolic currency, to be promoted in ways both serious and circus-like, to have its mechanism of action both revealed and couched in mystery. One aspect of the "relative advantage" of this tool over what had been done before – analysis done solely by humans – was also that it could be trumpeted one way in promotions, as an improvement on the merely human, without actually forcing confrontations over the replacement of humans on election night itself. In short, this suggests looking for a critical mass of factors, rather than a single defining one, in understanding conditions surrounding new applications of technology in journalism.

(7). Enhancement vs. replacement: It is not a new idea that new technology can be accompanied by the binary notion that it is a replacement, rather than adjunct, to human action. The concept of "technological unemployment" that CBS's Eric Sevareid broached on election night was itself not new – in the 20th century or earlier in modern times.

Whether the computers would, indeed, outdo human journalists on election night for the speed and accuracy of detecting electoral trends was something that could not be known in advance. In this particular case, it seems significant that the "trialability" and "observability" of the new technology were conjoined and built into the structure of the event itself. In fact, election night traditions already encompassed multiple approaches to detecting trends – newsroom experts, pundits and public intellectuals from the world of polling and academia, political officials, and wire reports carrying the judgments of newspaper editors from around the country about the electoral outcomes in their states – all of which were reported in 1952 along with the computer-based assessments. The enhancement vs. replacement question did not need to be settled in advance of trying out the new technology.

The salient features described above worked together in a matrix of sorts. They suggest the importance of studying the application of new technology to journalism in a multidimensional way, understanding the importance of the specific cultural circumstances, and noting ways in which diffusion may take place as collaboration across groups in addition to the spreading of innovation from one group to another. The dynamics here were certainly far more nuanced than the idea that the computer is presented as an option and journalists decide simply between using it or not.

To borrow a notion from the anthropologist Claude Lévi-Strauss about the value of certain things "to think with," the collection of salient features from election night 1952 might serve as an observational device. The final chapter of this study provides an opportunity to at least take note of events over the most recent decade of election-night coverage. These, I would argue, suggest that the patterns identified here are not limited to

53

a single episode from one long-ago night. In the end, however, I should also reiterate that

this dissertation does not seek to explain why and how computing entered journalism in

the way that it did. That would be, at best, premature. I do seek to better understand how

and why election night 1952 made sense and worked as a venue for this coming together.

A word about terminology: I initially settled on the term "cultural continuity" in

this dissertation as a way to refer to the staying power of values and practices and to talk

about the way in which new technology is used to extend and enhance them. When I

looked around to see if the term already had currency, I found that it did. In fact, it

appears in a variety of disciplines, including anthropology, sociology, political theory,

and media studies. I have opted to use this term nonetheless, rather than invent one never

used before. And I would call attention briefly at this point to a difference between my

intended application of this term and the way the term has been used by mass

communications scholar Clifford Christians.[115] In critiquing the notion that technology is

value-free and that only the uses of technology are "value-laden," Christians has

proposed a theory of "normative" technology. His idea is that designers and

disseminators of technology should take "cultural continuity" as a paramount value. He

argues that expert technologists should not design or deploy technologies that will

interrupt and colonize the cultures of those who have relatively less power – smaller

nations, developing nations, "natives," and so forth. My own conception of cultural

continuity does not take issue with this argument, but it does turn this view of the

relationship between technology and cultural continuity on is head. Rather than viewing

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[115] Clifford Christians, "A Theory of Normative Technology," in *Technological Transformation:
Contextual and Conceptual Implications*, eds. Edmund F. Byrne and Joseph C. Pitt (Dordrecht, The
Netherlands: Kluwer Academic Publishers, 1989), 123-139.

technology in an asymmetrical way as something that may place cultural continuity in jeopardy, this study observes ways in which potential users make decisions about deployment of new technology in a variety of dimensions that have – or seek to maintain – consistency with existing values and practices of cultures defined as narrowly as broadcast journalism or as widely as the larger shared culture of a nation. As noted above, by peering closely at the events of election night 1952, we see a lot of continuity with past practices and values in the journalism of election nights back to the 19th century. We come to appreciate, in the end, the somewhat counterintuitive notion that strong continuity with the past is an important key to change – that tools which break with the past technologically may well incorporate the past in terms of continuation of core practices and incorporation of core values.

Sources and Methods

While working on this project, I came upon *The Historian's Craft*, written by the scholar Marc Bloch and published after he was tortured and executed by the Gestapo in 1944 for his role in the French resistance. [116] Bloch had found it curious that historians did not do more to expose what he called "the honest groping of our methods," and he suggested that this failure was a disservice to readers.   I certainly felt that I had done my fair share of groping on this project. I also felt some identification with the uneven process described by Clifford Geertz in the introduction to a new edition of his classic

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[116] Marc Bloch, *The Historian's Craft*, trans. Peter Putnam, trans. (New York: Vintage Books, 1953), 87. I was alerted to this passage by Lawrence W. Levine, *Highbrow / Lowbrow* (Cambridge, Mass.: Harvard University Press, 1988), who uses it in his prologue to talk about his process of discovery. An account of Bloch's capture and execution can be found in Carole Fink, *Marc Bloch: A Life in History* (Cambridge: Cambridge University Press, 1991), 314-322.

1973 work on cultural anthropology, *The Interpretation of Cultures*. Geertz suggested

that there is more of a "backward order of things" to the scholarly work in his field than

at least some are willing to acknowledge.[117] The process tends not to start with clear

hypotheses that are then taken into the field to be checked by "carefully codified

procedures systematically applied."[118] Rather, material is collected – perhaps on subjects

more interesting to the researcher than those that prompted the search – followed by post-

hoc attempts to make sense of it all and fit the material into some sort of scholarly

framework. The final stage of assembly, into "chaptered books and thematic

monographs," is what Geertz describes as both "crucial and a bit of sleight of hand":

> Crucial, because without it we are left with an assortment of vignettes and
> apercus, fragments in search of a whole. Sleight-of-hand because it
> presents what is in fact a trailing construction as though it were a
> deliberated thesis happily confirmed. Anthropological arguments … are
> like excuses, made up after the stumblings that make them necessary have
> already happened.[119]

This, too, had a familiar ring to me.

As I toyed with a way to describe my research process – a discovery process,

really, and one that easily passed the Bloch and Geertz tests for groping and stumbling – I

realized that an account of my methods could best be described without any pretense to

having had a clever plan from the outset. At the beginning, I was hooked when I came

across that first clue about the Monrobot and the notion that there might be some missing

history in the oft-told, UNIVAC-only anecdote from election night 1952. From there, the

process might be described as a treasure hunt. It would come to involve materials

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[117] Clifford Geertz, *The Interpretation of Cultures* (1973; New York: Basic Books, 2000), v-vi.

[118] Ibid., v.

[119] Ibid., vi.

gathered in person or by correspondence from more than 40 archives and individuals

spread across the country, plus extensive use of online databases of historical

newspapers, magazines, and journals, and, of course, the Web. I was even able on

occasion to locate hard-to-find publications on eBay – along with a small part from a

long-deceased Monrobot. At various points along the way, snippets of video on YouTube

provided evidence that certain kinds of footage might still exist and that I should keep

looking. Videos uploaded to YouTube also proved useful on occasion for confirming the

accuracy of certain broadcast transcripts and even accounts of events depicted on old

television programs and films.

I had little to go on at the very beginning when I proposed this dissertation,

especially in the way of primary source materials. At that point, I had seen materials

available at the Library of American Broadcasting on my own campus at the University

of Maryland. These included NBC press releases from 1952 and trade publications

covering radio and television in that era. I had perused accounts in contemporary news

and magazine articles. I had seen some archival materials at the Library of Congress,

including microfilm of NBC's "master books." These contained details of 1952 election-

day television broadcasts, though not those of election night. I had visited the Hagley

Museum and Library in Wilmington, Delaware, to look at records of the Sperry-

UNIVAC division of the Sperry Corporation and its historical predecessors, which

included Remington Rand and the Eckert-Mauchly Corporation. A conversation over

lunch at a journalism history conference led me to a few minutes of footage dealing with

the 1952 election-night use of UNIVAC on CBS television.[120] And I had visited

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[120] Courtesy of J. T. "Tom" Tom Johnson of the Institute for Analytic Journalism.

computer historian Paul Ceruzzi at the National Air and Space Museum to pick his brain about the Monrobot. Checking his own files on the history of computing, he came up with a key lead for me. It was a note about a 1953 account in an edition of *The Digital Computer Newsletter* reporting that the Monrobot had had its public debut on election night 1952 in connection with the NBC television broadcast. He also told me how I could find the newsletter, which had been published at that time by the Office of Naval Research as a supplement to another periodical, *Mathematical Tables and Other Aids to Computation*.

Together, these items gave me at least the hope of finding more.

One of the most challenging aspects of writing about broadcast television in the early 1950s is that it tended to be ephemeral. Videotape would not come along for several more years. The means for recording television in 1952 was kinescope – using a motion picture camera to capture on film what appeared on a television monitor during a live broadcast. After a long search, I was eventually able to locate all six hours of the election-night broadcast on NBC television, which started at 9 p.m., plus the first few hours of election-night broadcasting on NBC radio, which started at 8 p.m., and several relevant radio broadcasts in the run-up to the election. I was also able to locate, after an even longer search, all of the CBS television network broadcast, which began at 8 p.m. In indicating that I located these broadcasts, I would not want to give the impression that this was done with any efficiency. It was not – more on this shortly. But in the end, I believe this to be the first study to have access to and make use of these broadcasts – or at least I have found no other in years of looking.

I learned several things in this quest for materials – beyond the standard protocols for this sort of historical research involving databases, reference works, catalogues, and the mining of many thousands of footnotes for leads to sources.[121] The first was not to be shy about letting it be known to as many people as possible what I was seeking. In their guide to historical inquiry, Jacques Barzun and Henry Graff write this: "The researcher must again and again *imagine* the kind of source he would like to have before he can find it."[122] I did that, and then shamelessly spread the word about what I hoped to find, talking about it with mentors, colleagues, students, acquaintances, other researchers, archivists, collectors, and just about anyone else I thought might be interested. I made hundreds of these contacts along the way. This part of the process yielded a steady stream of ideas and leads – many of them dead ends, but many not – and following up on them yielded new finds right up to the completion of the final draft of this dissertation.

A second thing I learned – not unrelated to the first – was that, just as in my former life as a journalist, cold-calling does not work as well as having someone in particular to call when contacting an organization or archive that might hold relevant materials. To this end, I pored through the acknowledgments in countless books and journal articles, looking both for relevant archives and the individuals there who had been helpful to other researchers. I asked the people with whom I spoke for names of those

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[121] I should also note here that this treasure hunt for archival materials also included occasional finds of bibliographical reference materials from the era about which I am writing, and these were useful, in turn, in understanding the nature of the conversation at that time about issues in the applications for new computing technology; these resources also helped steer me to articles I might not have found in other ways. One such example, which I encountered late in my research, was a bibliography with 1,158 entries over 36 pages – plus an index – of articles on computing written between 1945 and 1954; it was made available to me by Thomas J. Bergin, formerly of American University; Marjorie Comstock, compiler, *Bibiliography on Machine Computation, 1945-1954* (Upton, N.Y.: Brookhaven National Laboratory, May 1955).

[122] Jacques Barzun and Henry F. Graff, *The Modern Researcher*, 5th ed.(Boston: Houghton Mifflin, 1992), 47.

whom I should contact at other institutions. And I scanned the Web pages of archives and other entities looking for the names and numbers of archivists and specialists, and, where possible, I tried to learn a bit about their expertise and background. This almost always made for more interesting, productive, and enjoyable conversations – even if there were no fresh finds.

The third thing I learned was to cycle back around for a second or third look at repositories that did not seem at first to be very promising. One of the most important reasons for doing this is that archives may have new acquisitions, freshly digitized holdings, or enhanced finding aids, catalogs, and databases for exploring their collections. This turned out to be the key to getting access to the NBC broadcasts following the passage of time after an unsuccessful initial attempt. My renewed efforts focused on an online database of holdings that had been made accessible on the Web.

My experiences in obtaining the complete CBS television broadcast from election night 1952 succeeded, in stages, when I eventually realized that I needed to push past the initial appearance that much of the broadcast had disappeared. The CBS News Archives was able to locate only the first 30 minutes of the broadcast in its own holdings, and the archives made this available to me. A few additional minutes turned up at the Computer History Museum in Mountain View, California. One terrific find was a 30-minute compendium, including a number of key UNIVAC segments, which was located at the archives of the Peabody Awards in Georgia. CBS had apparently prepared the edited reel in an unsuccessful attempt to win the broadcast news award that year. And transcripts of those and other segments involving the UNIVAC turned up in the papers of CBS News correspondent Charles Collingwood at the Wisconsin Historical Society at the University

of Wisconsin in Madison. It seemed that would be all for the CBS television broadcast. But then well along in my research, I requested from the Computer History Museum a copy of a 1951 episode of CBS's *See it Now* program in which host Edward R. Murrow did a segment about a computer operating at the Massachusetts Institute of Technology. When I screened that episode, much to my surprise I found several extra, undocumented minutes tacked on at the end. These turned out to be from the 1952 CBS election night broadcast, and they included footage I had not seen in any of the other segments I had encountered. Realizing that there must be more, I redoubled my efforts and ended up on the Web site of the Paley Center for Media, a place I had visited earlier on a trip to New York. The database there had listings for lots of episodes of election-night programs for many years, but none for 1952. This time I searched for any election-night segment that had no listing of the year and no specific detail that would rule it out as possibly from 1952. The search returned 15 segments. A curator at the center determined from another list that eight of these were definitely not 1952. The other seven were a mystery. The Paley Center staff agreed to have a look at them. As it turned out, all seven were from election night 1952 – covering the period from 9 p.m. on election night to about 3 a.m., plus an edited compendium of segments at the end of the final reel that had clearly been the source for the video I had found earlier in the Peabody Awards collection. Between the Paley Center footage and the half hour I had obtained from the CBS News Archives, I was still missing a segment of almost 30 minutes between 8:30 p.m. to 9 p.m. Just weeks before completing this dissertation, I went back into to the Paley Center database and located one item that had a catalogue number one digit lower than the catalogue number for the 9 p.m. segment I had obtained earlier. Again, the Paley Center staff agreed to

screen it – and it turned out to be the full first hour of the broadcast, including the previously missing material between 8:30 and 9 p.m.

Other network documents and radio recordings came from a number of sources, the most complete of which, for the period of interest to me, was the NBC collection at the Wisconsin Historical Society. These included, among other things, radio recordings and NBC's planning documents for its 1952 election-night television broadcast, as well as documents from the coverage of earlier elections that are referenced in Chapter 3.

Not all quests were successful. ABC radio and television broadcasts, transcripts, press releases, and summaries have eluded me so far in searching for them with the network and other archives.

As with broadcast materials, the search for records from the computer world was also a treasure hunt, more or less. Pivotal experiences involved locating Max A. Woodbury, the mathematician who figured out the formulas behind the UNIVAC's election night forecasting, and Stephen E. Wright, the lead programmer in converting the formulas into instructions for the computer. Chasing leads in documents from the Hagley archives and on the Internet was the key to finding Woodbury. And finding Wright, whose name I also first encountered in a document at the Hagley archives, was made easier by the fact that he maintains a Web site with autobiographical material.

One of the biggest breakthroughs came after determining that the Monroe Calculating Machine Company, formerly based in New Jersey, survived as Monroe Systems for Business in an office and adjacent warehouse in Levittown, Pennsylvania – a fraction of Monroe's former size but still satisfying, in the computer age, a market for calculators. When I reached out to the chief executive officer, Dick Roberts, to ask

whether he might still have any records from the 1950s, he told me that he had been

waiting for years for someone to ask that question. Over time, as the company changed

hands and moved and consolidated in size, Roberts had gathered up what records he

could. They were sitting in a few dozen filing cabinet drawers in a room off the main

warehouse floor. He made them available to me. I went through them drawer by drawer.

The materials in them proved invaluable. Perhaps the best of these was a drawer full of

glossy in-house magazines, including one titled *Keynote*. There in the stack was the issue

from November 1952. And right in the middle of that issue was a two-page spread titled

"Monrobot Flashes Election Trends." It had photos, details, and, most importantly, 20

names of participants from the Monroe camp – in the article, and in a list in small type at

the end.

Following those leads took me eventually across the country to Dorothy Burkhart,

widow of William Burkhart, an inventor and Monrobot developer. And, like so many

others I encountered along the way, Dorothy Burkhart was generous with her time and let

me spend several days going through her husband's files. She also helped me track down

others who had worked with her husband and had been present at NBC's famed Studio 8-

H on election night in 1952.

Fifty-plus years are a long time to ask someone to remember the details from one

long-ago set of events. But almost everyone I contacted was willing to speak with me

and provide recollections, whatever documents and photos they had, and, especially,

leads. It is an article of faith among historians that remembered accounts should be

supplemented where possible with other records. I have done that wherever possible,

though it was not always possible to do so.

In addition, various archives hold the papers of some key participants in the events of 1952 who have since passed away. These included John Mauchly, co-inventor of the UNIVAC, and Herman Lukoff, the engineer who was responsible for keeping the computer equipment in good working order on election night. The papers of Mauchly's partner, J. Presper Eckert, ended up with a collector, Jeremy Norman, who listed and described them as part of a published catalog of his holdings. These were auctioned off at Christie's in New York while I worked on this project, and I had a chance to look at the items of interest to me before the auction.

One of the ironies of new digital technologies is that they can enable us in some ways to peer more deeply and closely into the pre-digital past. I benefited from several databases that were well established or became better known as I worked on this project. One of the most useful of these was NewspaperArchive.com. Covering thousands of mostly smaller newspapers, it allowed me, in conjunction with the handful of major papers that are full-text searchable through the ProQuest Historical Newspapers database, to do a chapter I had not originally envisioned when planning this dissertation. That is Chapter 6, which explores the culture-wide competition for attention on election night in 1952, encompassing not only television and radio, but events sponsored by newspapers, civic groups, schools, movie theaters, restaurants, and even a religious event featuring the evangelist Billy Graham.

There is, unfortunately, no equivalent to these databases of historic newspapers for transcripts of broadcast programs in the 1950s. But transcripts were made – including those made by third-party vendors in the business of selling them to corporations whose products might be mentioned on air. And serendipity served me well in finding some of

them. In the papers of Charles Collingwood, as noted earlier, there was a file identified as a UNIVAC "scrapbook" for 1952. In addition to the aforementioned transcripts by Radio Reports, Inc., similar transcripts had been prepared for occasions when the UNIVAC was mentioned on air after the election – not just by the CBS news staff, but by entertainers, talk-show hosts, and commentators from a variety of television and radio networks. These helped in understanding the way that the story of election night developed and took on a variety of meanings in subsequent days.

Serendipity also played a role in spurring my inquiry into the historical patterns of election-night journalism and the special place for the touting of technology on election night. At a used-book fair organized as a fundraiser by a local high school, I bought a reference book written for a general audience, *The History of the American Presidency*. Thumbing through it, I noticed in the entry for Woodrow Wilson a photo of a 1916 campaign poster plastered on a brick wall in St. Louis. [123] Next to that poster was another one for a vaudeville theater. In large letters it announced "PARISIAN FLIRTS," and this: "ELECTION RETURNS – BY SPECIAL WIRE." I was struck by several things, including the nexus between show business, election news, and technology, and this sparked my interest in learning more both about the culture of election night before 1952 and the competition for attention on election night that resulted in a mix of news and entertainment values.

One of the most challenging aspects of this process was pushing past versions of events in journalism history that are seemingly so well-known and well-established that they are simply taken as fact. One of these has already been discussed – UNIVAC and

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[123] John Bowman, *The History of the American Presidency*, rev. ed. (North Dighton, Mass.: World Publications Group, 2002), 119.

CBS, the one-network, one-computer account of election night 1952. Yet even after I came to terms with the idea that a second computer, the Monrobot, was used on NBC, I was stuck on the idea that nothing of the sort was used on ABC and that IBM played no role. After all, in addition to assertions by an ABC executive that the network would not use electronic brains, I could find no mention of an IBM role on election night in histories of the company and biographies or autobiographies of its legendary founder, Thomas Watson Sr., or his son, Thomas Watson Jr., who was president of IBM at the time of the election.[124] Rather, where election night was mentioned at all among these works, it was in reference to the publicity – unwelcome and even alarming from IBM's perspective – accorded to UNIVAC and IBM's arch rival, Remington Rand. As it would turn out, and as mentioned earlier, a variety of types of IBM equipment – including machines deemed at the time to be included among the imprecise category of "electronic brains" – had been used in a variety of venues, including the national and local New York City broadcasts on ABC. It did not help that ABC does not have an archive of news-related records or footage from this period, and no recordings of ABC from election night

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[124] Works consulted include: Kevin Maney, *The Maverick and his Machine: Thomas Watson, Sr., and the Making of IBM* (Hoboken, NJ: John Wiley & Sons, Inc., 2003); William Rodgers, *Think: A Biography of the Watsons and IBM* (New York: Stein and Day, 1969); Richard S. Tedlow, *The Watson Dynasty: The Fiery Reign and Troubled Legacy of IBM's Founding Father and Son* (New York: HarperCollins, 2003); Thomas J. Watson Jr. and Peter Petre, *Father, Son & Co.: My Life at IBM and Beyond* (New York: Bantam Books, 1990); James W. Cortada, *Before the Computer: IBM, NCR, Burroughs, and Remington Rand and the Industry They Created, 1865-1956* (Princeton: Princeton University Press, 1993); Bashe et al., *IBM's Early Computers*; Emerson W. Pugh, *Building IBM: Shaping an Industry and its Technology* (Cambridge, Mass.: The MIT Press, 1995); Franklin M. Fisher, James W. McKie, and Richard B. Mancke, *IBM and the U.S. Data Processing Industry: An Economic History* (New York: Praeger Publishers, 1983); Thomas Belden and Marva Belden, *The Lengthening Shadow: The Life of Thomas J. Watson* (Boston: Little, Brown and Company, 1962); Katharine Davis Fishman, *The Computer Establishment* (New York: Harper & Row, 1981).

1952 have turned up to date in searches elsewhere.[125] But the absence of an expectation of finding ABC using a computer or computer-like equipment also affected how I read some documents at first. For example, in one of the same transcripts found in Charles Collingwood's papers, there was a post-election discussion by a pair of radio talk-show hosts, "Dorothy and Dick," of what they had seen on air on election night in 1952. "Dorothy" mentioned that she had seen a discussion about "electronic brains" in which news broadcaster John Daly was being briefed on air about what this device would be doing at his network.[126] Initially, knowing that Daly was part of the ABC election-night broadcast, I thought that perhaps "Dorothy" had simply confused him with someone else. But later, I realized that "Dorothy" was Dorothy Kilgallen, who, in addition to being a radio talk-show host and newspaper columnist was a regular panelist on the CBS television entertainment program, *What's My Line*. In an unusual arrangement, that show on CBS was hosted by Daly, the ABC newscaster. That made it unlikely that Kilgallen was wrong, prompting me to redouble my efforts to find out about the "electronic brains" used at ABC. Enough bits and pieces then turned up in various places to at least put IBM equipment in the election-night picture at ABC and elsewhere: from the IBM Corporate Archives, including a story in an IBM company publication after the election and a mention in the records of an IBM executive; from the archives of the Charles Babbage Institute in Minnesota, where there was another story from late 1952 in a publication of the National Machine Accountants Association; from the Library of Congress, where

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[125] Joel Kanoff, director of video resources and digital archives at ABC News, informed me on Oct. 20, 2006, of ABC's limited holdings of television news programs from the 1950s, with nothing from election night in 1952.

[126] "Kollmars Think Univac Made Poor Showing," transcript prepared for Remington Rand of Dorothy and Dick Kollmar's radio show on WOR, Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

there was an article in an Associated Press magazine; from articles in microfilmed copies of the *New York World-Telegram and Sun* and the *Hartford Courant*; and even from the Web site of a retired computer pioneer who had been involved in the project to use Lockheed's IBM equipment for election-night broadcasting to NBC viewers in the West.[127]

Another very challenging aspect of understanding the events of election night 1952 was trying to determine precisely what went on behind the scenes at the UNIVAC home base in Philadelphia and out of view of the CBS cameras. The most common element of the standard election night story, as noted earlier, is that the UNIVAC spit out a prediction of a landslide – often said to have happened at 8:30 p.m. – but that this prediction was not deemed credible and was not aired, and only hours later was the behind-the-scenes drama revealed to viewers. But there are questions about the timing of this initial prediction, whether anyone at CBS was in on the decision to hold it back, and whether, at the point when the prediction was made, the computer program had detected a trend that could not have been detected by journalists and commentators who were following the returns in traditional ways. These are not trivial questions. The story that has prevailed over time goes like this: machine outsmarts humans and scores a publicity coup when the truth comes out. It carries messages about technological change. One is the idea that the new application of a new technology could do in those circumstances what humans absolutely could not. Another is the idea that a single ephemeral event – a television broadcast – could generate a uniform response to that technology. To assess these ideas, one needs to know, among other things, just when that first prediction was

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[127] Bemer, "Lockheed Aircraft."

made – and what journalists and commentators were making of the night's events without the benefit of a computer. Typical of the difficulties in asking and answering these questions is ambiguity in the documentary record. For example, after the election, Remington Rand put out a report, "How UNIVAC Predicted the Election for CBS-TV." During the research for this dissertation, two versions of this report were found in three separate archives. One version was found in two locations: among records given by Remington Rand's successor, the Sperry Univac division of the Sperry Corp., to the Hagley Museum and Library in Wilmington, Delaware, and the among the papers of UNIVAC's co-inventor, John Mauchly, at the University of Pennsylvania.[128]   The other version was found among computing history documents archived at the National Museum of American History in Washington, D.C.[129] These two versions carry the same date – December 15, 1952 – and the content is nearly identical, though typed separately. But they differ on one detail, the time of that first behind-the-scenes prediction – 8:30 vs. 9:15 p.m. Additional elements of ambiguity come from comparing the early vote totals listed in the famously dismissed and withheld UNIVAC prediction – which are uniform among the several versions of the prediction printout that were found in a variety of locations – to the smaller vote totals that can be seen and heard on CBS television, NBC television, and NBC radio at around 8:30 pm. And as early as the first 24 hours after the UNIVAC started digesting returns, various versions were already appearing about what

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[128] Max A. Woodbury and Herbert F. Mitchell Jr., "How UNIVAC Predicted the Election for CBS-TV," Dec. 15, 1952; copies are archived at (a). Box 263, Sperry-UNIVAC Company Records, Hagley Museum and Library (hereafter cited as HML), Wilmington, Del.; and (b). Box 3C28, Folder 436, John W. Mauchly Papers, Rare Book and Manuscript Library (hereafter cited as UP-RBML), University of Pennsylvania, Philadelphia, Pa.

[129] Max A. Woodbury and Herbert F. Mitchell Jr., "How UNIVAC Predicted the Election for CBS-TV," Dec. 15, 1952, Box 122, Computer Documents, NMAH.

happened when and who knew what. I will deal with this particular set of issues in Chapters 7 and 8. Suffice it to say here that encounters with this sort of ambiguity were not at all uncommon. In the end, the narrative presented here depended not on finding a large trove of complete and perfectly reliable records in a discrete number of repositories, but on making connections between many small pieces from multiple archives, private collections, databases, memoirs, and interviews – and dealing directly with conflicts that cannot be rectified with the extant records and recollections.

Narrative Choices

I have concluded, after trying a variety of approaches, that there is no single, ideal way to tell this story. I have picked one path through the material, but I am certain there are many other possible paths. Beyond that, I have been reminded, constantly, that among the chief frustrations of those who seek to say something about the past are the limitations of the historical record. Even after gathering, over several years, shelves full of documents, recordings, and interview notes, and after crisscrossing the country to visit archives and meet participants in these events, it is so easy to be stalled by the awareness of what is missing, all that dark matter. In an effort, instead, to make the most of what I do have, I have chosen anecdotes here and there to give a sense of the events and developments under study. I have chosen in some places to devote attention to a small number of people, especially those whose stories have not been told before. And I have chosen to present at some length a single document or news article or slice of television footage. I have done so with the idea that these would, in their specific detail, help expose

a larger picture where so much is missing. Or as is my hope, perhaps this dark matter is not so much missing as it is yet to be revealed.

As for choices of terminology, a variety of words – prediction, forecasting, projection, and prognostication – might be used to describe the act of making a claim about the probability of something happening or becoming known in the future. Attempts have been made on occasion to make distinctions between these terms for the purposes of categorizing and studying how we talk about the future. In examining the history of "technological prognostication," for example, David Nye makes what he calls a "crude division" of that activity into three parts: "We predict the unknown, forecast possibilities, and project probabilities."[130] As *The Oxford Companion to Philosophy* points out in the entry on "prediction," without making Nye's sort of distinctions, "the key role of prediction in human affairs inheres in our stake in the future."[131] Humans constantly make judgments about what might follow a particular course of action. Evaluation of a scientific theory is connected to beliefs about its predictive capabilities. At the heart of this dissertation are events that take place on election night, when early returns are used to say something about the likelihood of a particular outcome. Various terms were used in 1952, and are still used, to refer to that activity. I do not explicate or make specific distinctions between them, except to note, where relevant, the use of particular words in particular ways – earnestly or in jest – to refer to the efforts of humans and machines to say something about what was to come.

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[130] David E. Nye, "Technological Prediction: A Promethean Problem," in *Technological Visions: The Hopes and Fears that Shape New Technologies*, ed. Marita Sturken, Douglas Thomas, and Sandra J. Ball-Rokeach, (Philadelphia: Temple University Press, 2004), 159-176.

[131] "Prediction," *The Oxford Companion to Philosophy*, Ted Honderich, editor (Oxford: Oxford University Press, 1995), 713-714.

One other point is worth mentioning. During the course of my research, I could find no references to the use of modern, stored-program digital computers on an election night prior to 1952. The UNIVAC and Monrobot appear to be the first, though one cannot absolutely rule out the possibility that some other instance will turn up that did not leave an indelible mark on the available historical record. The use of computers on election night in 1952 was certainly treated then as a first. We do not know a great deal yet about ways in which advanced pre-computing machines for calculating and organizing information were used in connection with election nights or other news reporting before 1952. Pre-computer technologies for counting and sorting IBM punched cards, for example, had been around for years in newspaper business offices and continued to be used after the commercialization of early computers.[132] There was even an intriguing line in an Associated Press in-house publication following the 1952 election. Describing the use of more than a ton of IBM punched-card equipment at the AP headquarters in Washington on election night, the article cryptically reported that such devices – IBM "mechanical brains" – had been "old stuff to some bureaus – been using them for years."[133] The machines used by the AP in Washington that night were not computers – the article mentions a 195-pound card-punching machine and a 1,900-pound tabulator, also referred to in a photo caption as an accounting machine. But learning more about such uses would contribute to our understanding of the kinds of calculating

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[132] For example, in an account of a pioneering computer study of crime in Dade Country, Florida, that was published by the *Miami Herald* in 1968, the lead reporter, Clarence Jones, was said to have turned to an older counter-sorter machine at times when there was limited access to the newspaper's IBM 360 computer; Maier, "Digital Diffusion in Newsrooms."

[133] Douglas Cornell, "Okay, Okay, Election 'Brain' – But Can It Write Leads Too?" *AP World*, Winter 1952-53, 6.

and tabulating equipment that may have been used in connection with news reporting before – and even after – the advent of the computer.

In the end, I am not so much interested here in the notion of "firsts" for their own sake. Rather, I am interested in the conditions that help us better understand this early intersection of computing and journalism. As we will see in the next two chapters, while computers provided something new on election night when they arrived, the role of novelty, showmanship, and data-based prognostication on election night was not new at all.

Chapter 2: Election Night in the Age of Print

It is a natural impulse, when contemplating "innovation," to focus on what is new – that is, to talk about change. The very word, "innovation," draws us to the notion of "newness." But when as members of the first generation of commercial, stored-program computers, UNIVAC and Monrobot sat poised for their debut as election-night tools in 1952, they were, in many respects, continuing an old election-night story. It was a story that encompassed well-established forecasting methods stretching back into the 19th century. It was a story that provided a prominent place, election after election, for technological novelty. And it was a story that played up technological wonders not only in disseminating election news, but in attracting a crowd and promoting the intersecting interests of journalists and their technological collaborators. The drama of reporting the election-night story had long been *part* of that story, as had the seemingly wondrous means by which journalists and collaborating "experts" gathered, analyzed, and disseminated the news. Even in the decades before radio and television, newspapers did not wait until the next day to publicize election results and forecasts. Publishers employed novel means to transmit the news by sight, sound, and wire to audiences in the street, at indoor events of all sorts, and even miles away at home. Commentary on the size and extent of these audiences – drawn in, reached and informed by newspapers with the help of technological innovations – became part of the story, too, and provided bragging rights for bolstering the news organizations' stature in the communities they served. In a competitive environment, election night was a chance for journalists to shine, and touting their extraordinary, technologically enhanced efforts had been a customary feature of pre- and post-election reporting long before 1952.

There were well-known risks, too. One was the very real risk of embarrassment from a wayward forecast in the rush to get the news out. Another was the risk of making a tardy call and being beaten by a competitor. So there was a special place for any tool, any practice, or any sort of collaboration with non-journalists that could help – anything that could reliably improve the extent of the available vote count, the speed at which it was assembled, the conclusions that could be drawn from it, and the size of the audience that could see or hear it. These enhancements were desirable for the news that could be reported on deadline. They were also desirable for staking a claim to methodological supremacy, and they continued to have a place in election-night reporting during the era of radio and then television.

Conditions for Election Night as a Journalistic Event

Long before the advent of broadcasting and computers, journalists had been at center stage on election night. How did they become key players in a set of intensely-engaging events compressed into a few hectic hours on one night, election after election? This role has been commonplace for so long now that the thought of an election night without news organizations as centers of attention seems odd. But election night as a journalistic phenomenon has a history, most visible in the case of presidential elections. In fact, decades would go by after the first presidential election before there was any common, discrete event across the country that could be called a national "election night" and until the right constellation of conditions found journalists as the focus of public attention on that night.

One of these conditions was expansion of popular participation in elections through voting, along with the corollary rise of public interest in the outcome. Though the United States was founded as a democracy, voting rights were far from universal at the outset.[1] With widespread exclusions based on gender, race, and property ownership, voting tended to be an elite affair in the early years of the republic. And in a number of the original states, even elite members of society with voting rights did not participate in choosing the president. Instead, legislatures in those states picked electors who, in turn, would meet with the electors from other states to choose a president.

As voting rights expanded, most white males possessed those rights by the early 19th century. Along the way, there were signs of increasing public interest in elections and outcomes while election night took shape as a complex social phenomenon. In a nation where powerful and privileged interests held sway in the economic, social, and political spheres, popular elections, by their very nature, turned the de facto hierarchy of American society on its head. For one day, at least, a large number of ordinary Americans – those to whom suffrage had been extended – seemed to have a say in the affairs of public life. In the mid-19th century, the poet John Greenleaf Whittier captured this notion in lines from a poem entitled, "The Poor Voter on Election Day."

> The proudest now is but my peer,
>   The highest not more high;
> To-day, of all the weary year,
>   A king of men am I.
> To-day alike are great and small,
>   The nameless and the known;
> My palace is the people's hall,

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[1] A thorough history of changes in voting rights can be found in Alexander Keyssar, *The Right to Vote: The Contested History of Democracy in the United States* (New York: Basic Books, 2000).

The ballot-box my throne![2]

This social inversion carried through to election night.[3] Celebrations could be lively and even rowdy affairs, with bonfires, crowds of unruly boys roaming the streets, the spirited collection of wagers, and disputes verging over into violence and even death.[4]

Along with expanded participation in balloting, there came evidence of expanded public interest in the expected and actual outcome. Long before newspapers and election nights became joined in the public mind – and long before news organizations commissioned and published scientific public opinion polls – citizens devised their own means of trying to divine which candidate was most likely to win. Watching the ebb and flow of odds in a vibrant betting market that surrounded presidential elections was one way.[5] And there were a variety of other efforts to quantify voter preference in advance of elections. Scholars have settled on the election of 1824 as a particular watershed in the evolution of public-opinion polling.[6] That year's presidential contest would involve both a handful of notable political personalities and a significant milestone in public involvement, with 18 of 24 states choosing their electors by popular vote.[7] During the run-up to the election, straw votes were taken at militia assemblies, grand jury meetings

[2] John Greenleaf Whittier, "The Poor Voter on Election Day," *The Chapel of the Hermits and Other Poems* (Boston: Ticknor, Reed, and Fields, 1853; facsimile edition by Adamant Media Corporation, 2005).

[3] One of the landmark studies of another form of social inversion in the 18th and 19th century America is Stephen Nissenbaum's *The Battle for Christmas* (New York: Vintage Books, 1996).

[4] For example, Brewin writes about the association of Philadelphia's 19th-century election nights with bonfires, the collection of "freak" wagers, and violence in *Celebrating Democracy,* 77-83, 123-128. See also, Brewin, "The History and Meaning of the Election Night Bonfire."

[5] Rhode and Strumpf, "Historical Presidential Betting Markets," 127-142.

[6] See James W. Tankard Jr., "Public Opinion Polling by Newspapers in the Presidential Election Campaign of 1824," *Journalism Quarterly* 49, no. 2 (Summer 1972): 361-365; Tom W. Smith, "The First Straw? A Study of the Origins of Election Polls," *The Public Opinion Quarterly* 54, no. 1 (Spring 1990): 21-36.

[7] Smith, "The First Straw?" 23.

and tax gatherings. [8]   At musters of local militias on the Fourth of July, participants

would also offer toasts to their favorite candidates. The number of toasts was taken as an

indicator of political strength, and these counts were reported in newspapers. The

newspapers did not invent these early or "proto" straw polls. The counting of toasts was

an outgrowth of natural public interest.[9] But local newspapers did report on them, and

those reports reappeared elsewhere, reflecting a common practice in that era for editors to

freely recycle items from periodicals that arrived by postal service or were carried by

travelers.[10]   In what is surely an early example of journalistic data analysis, editors in

some places culled reports from a variety of newspapers and published them in the

aggregate. The *Raleigh Star and North Carolina State Gazette* compiled results from 49

gatherings and published them in August 1824, then aggregated the results of some 155

gatherings by October.[11] Such tallies were reported with a combination of curiosity and

skepticism.[12] In August 1824, the editors of the *Republican Compiler* of Gettysburg,

Pennsylvania, reprinted this item from another Pennsylvania paper:[13]

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[8] Ibid., 26.

[9] Littlewood, in his study of "horse-race journalism," writes: "The impetus for the development of straw polls and their progeny – the modern 'scientific' polls – comes not from journalists but from The People"; in Littlewood, *Calling Elections,* 176; he also discusses this phenomenon in detail in Chapter 2, 15-27.

[10] Matheson reports an example of an Illinois paper, *The Alton Telegraph*, reprinting an account in 1836 of voting in Pennsylvania; the account came from a Louisville paper, which, in turn, got the news from a Pittsburgh paper that had been provided by a steamboat passenger; Matheson, *Steam Packet to Magic Lantern,*. 41.

[11] Tankard, "Public Opinion Polling by Newspapers in the Presidential Election Campaign of 1824," 363; Smith, "The First Straw?" 27.

[12] Smith, "The First Straw?" 27-29.

[13] "Fourth of July Toasts," *Republican Compiler*, Gettysburg, Pa., Aug. 11, 1824, 3. The original source of the information is given as "*Penn. Intel.*," an apparent reference to the *Pennsylvania Intelligencer* of Harrisburg.

> *Fourth of July Toasts* – Some have supposed that much of public
> sentiment may be gathered from this source. No doubt this is in some
> degree fact; but we do not believe it is an exact criterion of the whole
> public feeling. With a view to get all the light we could from this quarter,
> we carefully perused all the papers received at this office, containing
> anniversary toasts, and have devoted more than a whole day, in examining
> them. The result is, that in this state, the 4th of July was celebrated by 111
> distinct parties, of all descriptions – that they collectively drank 2807
> toasts: of these, the four Presidential candidates received as follows:
>
> | | | | |
> |---|---|---|---|
> | JACKSON, | - | - | 268 |
> | CLAY, - | - | - | 29 |
> | CRAWFORD, | | - | 20 |
> | ADAMS, - | - | - | 11 |

The article went on to elaborate on its method, the sort of disclosure that even today may

get short shrift in news reports on polls and surveys: Jackson, it was noted, was credited

with toasts that may not have named him directly but were offered in honor of the "Hero

of Orleans." The piece concluded with this caveat: "These are the facts we have

gathered, as regards Pennsylvania. Let each draw his own conclusion from them."[14]

In addition to evidence of increasing public interest in presidential elections and

journalistic interest in voter sentiment, other important elements were in place by 1848

that would help solidify the position of journalists at the center of election-night activity.

Until that year, there could be no single, nationwide "election night" because states held

their elections, even for president, on different days. In fact, there was a window of 34

days in the fall during which voting for president could be held. That changed when

Congress enacted, in 1845, a uniform voting day for president, to take effect in 1848. [15]

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[14] Ibid.

[15] Until 1844, the quadrennial voting for president could take place during the 34 days preceding the first
Wednesday in December. In 1845, Congress changed that to the first Tuesday after the first Monday in
November. The same uniform date for biennial Congressional elections was established by in 1872, and
voting for the U.S. Senate had been held on that date since the direct election of Senators became law
through a Constitutional amendment in 1914. William C. Binning, Larry E. Esterly, and Paul A. Sracic,
Encyclopedia of American Parties, Campaigns, and Elections (Westport, Conn.: Greenwood Press, 1999),
95-96.

Still, having a uniform voting day alone did not guarantee the evolution of

election night as a phenomenon that would find newspapers at the center of attention. A

change in the pace at which news could move from place to place was also critical. Of

course, to people living at that time, delays were not perceived the way they are today.

Americans marveled as early as the 1830s and 1840s at the "annihilation of space and

time." But when that phrase turned up in periodicals of the day, it referenced accounts of

steamships crossing the Atlantic, a voyage that could be measured in weeks; locomotives

traveling at a wondrous 30 miles per hour; and telegraph messages traversing hundreds of

miles – from Buffalo to Pittsburgh and back, by way of New York and Philadelphia – in

under two hours.[16] Even so, weeks and even months might elapse as election returns

dribbled in from distant states during an era when newspapers relied on trains, horse

relays, steamboats, rowboats, messenger pigeons and even signal flags to transmit

information.[17] On Nov. 10, 1840, the editor of the *Southport Telegraph*, a newspaper in

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[16] See, for example: Probus, "Letters from New York," *Southern Literary Messenger* 5, no. 8 (August 1839): 524; "The First Locomotive" [by "One Who Saw It"], *The Knickerbocker; or New York Monthly Magazine* 13, no. 4 (April 1839): 343; "Annihilation of Space and Time," *Dwight's American Magazine, and Family Newspaper* 3, no. 11 (March 13, 1847), 168; "Opening of the Baltimore and Philadelphia Rail Road," *Catholic Telegraph* 6, no. 38 (August 24, 1837), 302. Writing about the intersecting notions of technology, nature and progress in 19th-century American, Leo Marx writes that "no stock phrase in the entire lexicon of progress appears more often than the 'annihilation of space and time,' borrowed from one of Pope's relatively obscure poems ('Yes Gods! Annihilate but space and time, / and make two lovers happy."); in Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America* (New York: Oxford University Press, 1964), 194. And the sense that things were moving quickly also extended to the circulation of the written word. At least some Americans also felt they were facing a flood of information. As far back as 1820, Washington Irving complained that a great many people wanted to be in print, resulting in an alarming "stream of literature" that had "swollen into a torrent – augmented into a river – expanded into a sea," and that "modern genius" would be "drowned in the deluge"; cited by Mark D. Bowles, "Liquefying Information: Controlling the Flood in the Cold War and Beyond," in *Cultures of Control*, ed. Miriam R. Levin (Amsterdam: Harwood Academic, 2000), 235.

[17] In a history of the Associated Press written in 1940, Oliver Gramling tells of the use of signal flags to transmit breaking news from the 1848 Whig National Convention across the Hudson River in its journey from Philadelphia to New York; Oliver Gramling, *AP: The Story of News* (New York: Farrar & Rinehart, 1940), 24.

the Wisconsin Territory, was underwhelmed by the adequacy of election news.[18] Although returns were trickling in from various parts of the country, they were "not sufficient to tell how any one state has gone."[19] And the stakes in making a judgment from insufficient data were deemed serious: "We should not like to risk our reputation for prophecy by venturing an opinion."[20]

Those limitations in the movement of information would start to fade away with the arrival of the telegraph. The first presidential election involving telegraphic transmissions took place in 1848.[21] And the wonders of technology quickly became part of the story that newspapers told about their own efforts to deliver the news. Following the 1848 election, a newspaper in southwest Illinois reported the astounding fact that due to the "facilities afforded by the magnetic telegraph," returns from as far away as New York, Richmond, and "nearly the whole of Vermont" had arrived several hours before the newspaper got returns in from a nearby village.[22] But arrival of the telegraph did not bring about immediate or universal changes in the speed at which returns could be aggregated. Telegraph installations did not spread at once to each community where votes were cast. The process took time, and the nation itself was expanding. After winning statehood, Californians first participated in the national vote in 1852. That was still nine years before a telegraphic network crossed the continent. Existing technologies

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[18] "Presidential Election," *Southport Telegraph*, Wisconsin Territory, Nov. 10, 1840, 2. The use of the name "Telegraph" for newspapers predated the invention of the electrical telegraph with which the word would later be associated.

[19] Ibid.

[20] Ibid.

[21] Richard A. Schwarzlose, *The Nation's Newsbrokers* 1, *The Formative Years, from Pretelegraph to 1865* (Evanston, Ill.: Northwestern University Press, 1989), 142-145.

[22] *Alton Telegraph*, Nov. 19, 1848, 3, cited in Matheson, *Steam Packet to Magic Lantern,* 87.

and overlapping systems were needed in the interim. Even as the telegraph was taking root, reporting on election returns might call attention, breathlessly, to the other technologies in place to speed the vote count on its way. A brief item that appeared in the *New York Daily Times* on Nov. 12, 1852, noted, "Some extraordinary engine running was performed on the railroads in Massachusetts … in collecting the election returns."[23] The story went on to quote an article appearing in another newspaper about a train that had run from the Vermont line to Springfield, Massachusetts – "50 miles – making six stops on the way, in fifty-three minutes!"[24] After the 1860 election, the pony express continued to be an important means for transmitting vote counts to telegraph stations – and worthy of mention in news stories about the election.[25] Even when 1861 marked the first coast-to-coast link, it would take years for the telegraph to spread to enough places for a critical mass of votes to be reported nationwide on election night. In 1882, a desire to speed up reporting from two mountainous Congressional districts prompted the editor of the *Atlanta Constitution* to run telegraph and telephone wires, charter trains, and set up relays of couriers on horseback.[26] As late as 1904, a lengthy magazine article on the workings of the Associated Press noted that the telegraph and telephone had become the most common means of gathering returns and that bicycles were employed, too, but "in some of the more remotely and thinly settled counties, couriers on horseback are used."[27]

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[23] Untitled, item about election returns, *New York Daily Times*, New York, Nov. 12, 1852, 1.

[24] Ibid.

[25] "Later from the Pacific; Arrival of Overland Express—Full Election Returns from California Received—Heavy Vote," *New York Times*, Dec. 11, 1860, 5.

[26] Raymond B. Nixon, "Henry W. Grady, Reporter; A Reinterpretation," *Journalism Quarterly* XII, no. 4 (December 1935), 341-356, citing at p. 354 the *Atlanta Constitution*, Nov. 7, 8 and 9, 1882.

[27] Charles Edward Kloeber, Jr., "The American Newspaper; [Part] IX: The Press Association," *The Bookman; a Review of Books and Life*, November 1904, 196ff.

New technological twists could bring old systems into focus as novelties in the transmission of election information. In 1896, the *New York Times* carried a front-page item on the expanding utility of homing pigeons. As a result of experimentation at the United States Naval Academy – including the invention of a lightweight, water-tight message holder made of aluminum – "messenger pigeon stations" had been set up at navy yards on both coasts. Among the various other uses of the birds of late, the *Times* reported – and *Scientific American* reprised a few months later –newspapers had used pigeons during recent elections to transmit returns.[28]

A New Problem for Newspapers – Aggregating the Vote on Deadline

Methodologies for aggregating returns in meaningful ways and projecting winners from incomplete data predated the telegraph. Writing his classic history of American journalism in 1873, Frederic Hudson was already referring to the handling of election returns as a "science."[29] He attributed expertise at this task to some of the journalists whose fame as editors was associated with the "penny press" and its attendant expansion of popular newspaper readership before the advent of the telegraph.

> These [election] figures, so interesting to politicians and to office-seekers when they result in majorities on the right side, are very difficult to arrange clearly and intelligently. Sometimes they are a Chinese puzzle. One must understand the science not to make stupid blunders…. Bennett, of the Herald, thoroughly comprehended them. So did Greeley, of the

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[28] "Their Sphere Enlarging; Homing Pigeons Demonstrate Their Usefulness in Many Ways," *New York Times*, Nov. 28, 1896, 1; "Increased Use of Homing Pigeons," *Scientific American* 76, no. 2 (Jan. 9, 1897), 20.

[29] Frederic Hudson, *Journalism in the United States, from 1690 to 1872* (New York: Harper & Brothers, 1873), 370-371.

Tribune. Others, in attempting to give election returns, would get them terribly confused.[30]

Another master of this "science" was Richard Haughton.[31] When Haughton was recruited to edit the *Boston Atlas* in the 1830s, according to Hudson, the move precipitated a problem in election coverage at his old paper, the *Journal of Commerce* in New York. Who was to handle this "peculiar department," as Hudson called it? The paper's proprietors, David Hale and Gerard Hallock, discussed the issue:

> Hale told Hallock he must perform this task. "I don't understand such things; I never did, and I never could," said Hallock. "Well," replied Hale, "we must have them, and you must try your hand at them." Hallock, patient and obliging man, did try, and succeeded. Some of the Union merchants, in giving silver plate to him one day for his services to the country as a journalist, included in their compliments one for the accuracy of his election returns.[32]

Understanding the "science" of handling election returns took on greater urgency after the arrival of the telegraph, which precipitated a new sort of election-night crisis for newspaper editors.[33] This crisis runs counter to the more common way of viewing the ramifications of the telegraph. In works such as *The Control Revolution*, James Beniger's classic study of the 19th-century roots of the "information society," the telegraph is revealed as a solution to a serious safety problem for the railroads at a critical period in the nation's development.[34] The harnessing of steam power and its application

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[30] Ibid.

[31] Ibid., 370-371, 391.

[32] Ibid., 370-371.

[33] Matheson provides an account of how this affected newspapers in Southern Illinois in *Steam Packet to Magic Lantern*, 80ff.

[34] James R Beniger, *The Control Revolution: Technological and Economic Origins of the Information Society* (Cambridge, Mass.: Harvard University Press, 1986), 219-226.

in the nascent rail system had allowed for the movement of unprecedented quantities of goods – especially the output of the industrial revolution – at unprecedented speeds and greater distances. But in the early rail lines, trains typically ran in both directions on a single track. Inadequate information about the location of trains and inadequate systems of control led to numerous and notorious head-on collisions. For that problem, the telegraph – and the ability to instantly transmit information about the location of trains – served as a critical part of the solution. But for newspapers, the seeming godsend of the rapid flow of election returns meant a deluge of information. The Associated Press – itself nascent in the late 1840s with the formation of its progenitor, the New York Associated Press – would come to play a pivotal role in organizing and aggregating the flow of election-night returns from around the country. But this system would take years to evolve. The combination of regional press associations into a truly national entity would be key, as would be the development of procedures and systems for handling the new flood of telegraph-transmitted returns in an efficient and effective manner. A plaintive appeal from the New York Associated Press shortly before the 1852 election gives a hint of the challenges that had to be met. Reprinted on the front page of the *New York Daily Times* under the headline "Telegraphic Election Returns," the circular bespoke an ambitious goal, nothing less than "to enable the Press of the entire country to announce the result of the national election on the morning after the closing of the polls."[35]   "Confusion" – a word that appears three times in the circular – was the enemy, and the news service was asking telegraph operators, correspondents, and newspaper

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[35] "Telegraphic Election Returns," *New York Daily Times*, Oct. 20, 1852, 1. Similar requests for election returns to be submitted in a prescribed way ran in subsequent election years. See, for example, "Important to those who send Election Returns," *New York Daily Times*, Oct. 30, 1856, 1.

agents to follow a few rules. Only "reliable individuals" were to be trusted to supply

returns. Except for large cities, vote counts should be reported at the county level, not for

each small town. The "actual majority" for each presidential candidate was to be

reported. When complete returns were not available, it would be okay to send the

"probably majority" – a forecast, in effect – but only by making clear the percentage and

number of towns in a county on which the estimate was based. To be avoided were

rumors – in fact, "rumors of all sorts." As it was, the *Times* would note in the week after

the voting that "The Election returns dribble in slowly."[36] Eight years later, the

expansion of the telegraph notwithstanding, complete news of election of Abraham

Lincoln in 1860 would still require a combination of means – the telegraph where it

existed, the pony express where it did not.[37] In December, the vote was still coming in.[38]

Telegraph wires would not stretch from coast to coast until the next year.

Newspapers and Election Night in the Latter 19th Century

As a constellation of requisite parts came together – expanded suffrage, common

voting dates, technology for rapid transmission of returns, and systems for collating those

returns in a meaningful way – the significance of election night for newspapers increased.

The latter half of the 19th century saw the continued development of election-night

practices that would serve as a base of cultural continuity heading into the 20th century

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[36] "News of the Morning," *New York Daily Times*, Nov. 10, 1852, 4; this article reported the results of the voting in Tennessee and Kentucky.

[37] "California and Oregon; Arrival of the Overland Express – California Considered Certain for the Republicans – Lincoln Ahead in Oregon, &c.," *New York Times*, Nov 26, 1860, 1.

[38] "Later from the Pacific; Arrival of the Overland Express – Full Election Returns for California Received – Heavy Vote," *New York Times*, Dec. 11, 1860, 5.

and right up to 1952.   These included the use of well-orchestrated systems for gathering

local and distant returns. Journalists collaborated with non-journalists – outside experts –

for the calculation of results. Empirical methods were employed for predicting the

winners. Technological innovation figured prominently in attention-getting means of

displaying returns to an audience in advance of publishing returns in the newspaper. The

people who ran newspapers also demonstrated an awareness of the audience as

participants rather than merely passive observers. In this mix, showmanship became a

paramount value. Reporters and publishers inserted themselves into the story of election

night, touting their accomplishments not only under intense deadline pressure but in

preparations lasting weeks or even months. Technologies of information and

communication played multiple roles – as technical means to journalistic ends, as

wonders to attract attention, as promotional tools both for the journalists and for the

technologists, and as symbols of the excellence of their purveyors. In this era, even the

audiences for these events – rising in numbers to astounding levels – became, themselves,

objects of wonder.

Methods of Forecasting

The increased ability of newspaper editors to have vastly more information – and

better-organized information – in the hours after the polls closed posed a new challenge

beyond the mere imperative to present the vote count in a comprehensible way. Editors

might be able to make a convincing forecast in their first regular editions, in extras, or

even sooner in announcements to waiting crowds. But that opportunity to show off their

reportorial and analytical prowess was one side of a two-edged sword. The absence of a

forecast – or worse, the issuance of a forecast projecting an outcome that would turn out to be grossly incorrect – could bring embarrassment instead of prestige.

Part of the "science" of election returns is the notion that predicting a winner from early returns presents a special sort of mathematical problem. This problem cannot be solved without knowledge of the fine-grained geographical dimensions of politics and access to detailed, comparative data about past elections. In short, the early vote count is useless as an indicator of victory if divorced from details about the locations providing that vote and the electoral history of those locations. Nineteenth-century newspaper editors came to understand this just as well as 21st-century television news producers do. As early as 1848, a newspaper in Wisconsin evidenced this sensibility in praising the telegraph for "relieving" the populace "of that long suspense which formerly followed elections." Though results were not available from all locations – in fact, the paper noted, telegraphed results had been "meager" – they had come "from such points as would serve as a basis of calculations for other places."[39] After the same election, readers of the *Massachusetts Ploughman and Journal of Agriculture* were being advised in 1848 to hold onto newspapers listing election returns in order to consult them again at the next election.[40] And in an 1892 article about election-night methods and practices, Willis John Abbot, managing editor of the *Chicago Times*, wrote, "Comparison is the prime factor in the solution of the election problem."[41] While assessing the outcome of a presidential

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[39] "The Telegraph – The Annihilation of Distance," *Weekly Wisconsin*, Milwaukee, Nov. 22, 1848, 2.

[40] "The Great Election," *Massachusetts Ploughman and New England Journal of Agriculture* 8, no. 6 (Nov. 11, 1848), 2.

[41] Willis John Abbot, "How the Returns Come In: Election Night in a Great Newspaper Office," *Christian Union* 46, no. 20 (Nov. 12, 1892), 876.

election meant focusing primarily on the "doubtful states," determining on election night

which party would control Congress and by how much could be even more daunting:

> [It] is a task requiring exceptional facilities in the way of getting and
> handling the news, and unusual knowledge of political statistics. Yet it has
> been done with practical accuracy by several newspapers during the
> present decade. It will be readily understood that estimation, comparison
> – scientific guesswork, in short – contributes as much to the result in this
> case as the actual returns.[42]

Newspapers even found ways to generate income from the sale of data that might be used

to make sense of election returns as they were reported. Before the 1860 election, for

example, the *New York Tribune* assembled returns from elections back to 1824 – together

with a "vast amount of historical matter" – and packaged it all up in a 254-page volume,

The Political Text Book, which sold for one dollar. [43] An advertisement for the *Tribune's*

election data book – an ad that ran in the *New York Times* – suggested that "As the

Election returns come in, politicians will want to compare the result with the votes of

former years."[44]

Data points for future use could also be generated from fine-grained analyses in

the days following elections – albeit tinged with the biases of the day – linking locale,

ethnicity, and vote counts. One such example appeared in the *New York Times* following

Lincoln's 1864 reelection victory over the Democratic challenger, Gen. George B.

McClellan.[45] The *Times* concluded that "from Maine to Kansas," though with "marked

exceptions," the "vicious and ignorant population of the cities and manufacturing villages

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[42] Ibid.

[43] "To Politicians," advertisement, *New York Times*, Nov. 3, 1860, 3.

[44] Ibid.

[45] "A Few Interesting Figures from City Election Returns," *New York Times*, Nov. 12, 1864, 4.

has been for McClellan, while the strength of Lincoln lay in the farming class, and the intelligent class of the towns."[46] A ward-by-ward dissection of the New York City returns followed. Heavy support was reported for McClellan in "all the most crowded and wretched of the 'tenement house' districts," as in the First Ward, "where there are nearly as many rum-holes as houses," or in the Eleventh Ward, home to "immense multitudes of ignorant Germans, … and where domicile, the rag-pickers and bone-gatherers of New York."[47] Lincoln support could be pegged to specific city blocks with "separate houses and a well-off or intelligent class."[48]

Employing data from past elections and an understanding of variations in the electorate, some editors developed legendary methods of election-night analysis and a special reputation for accuracy. Charles H. Taylor, the *Boston Globe's* iconic publisher and editor, had worked out a system for election-night forecasting by 1883, one that he supervised until his final election night at the newspaper in 1920. This system was chronicled in 1923 by a *Globe* editor of Taylor's era, James Morgan, and was later described in a history of the *Globe* published by another *Globe* newsroom veteran, Louis M. Lyons. [49] The heart of Taylor's system for state elections involved following the source of returns as they came in on election night, right down to the precinct level. The *Globe* was able to tame the mass of information flowing through the newsroom with specially designed organizational tools. The figures were captured on duplicate sheets of

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[46] Ibid.

[47] Ibid.

[48] Ibid.

[49] Morgan, *Charles H. Taylor, Builder of the Boston Globe* (1923), 123-129; Louis M. Lyons, *Newspaper Story: One Hundred Years of The Boston Globe* (Cambridge: Harvard University Press, 1971), 104-106.

paper, color-coded so that that one set would go to the political editor and others to various arms of the newsroom operation. These incomplete and scattered returns would be assessed using another set of tools, historical data for the same precincts that had been assembled into books during the weeks and months before election day. Comparisons were made to detect whether current voting patterns were following or diverging from what had happened in prior elections. The *Globe* staff also came to understand ways of examining the returns by general geographical area – Boston, the other Massachusetts cities, and the towns – with awareness from past elections of the plurality a candidate would need in one of these areas to overcome a deficit elsewhere. Without knowledge of the specific sources of the vote as it came in, the cumulative totals would have had little value as the night went on. But with that specific knowledge – combined with input from the political writers who might be asked to make sense of anomalies ("some riddle in the returns," as Lyons put it) – a forecast could be made by a methodology that the *Globe* had developed and come to trust over time.[50]

Morgan acknowledged that while Taylor's system "bars all guessing … by reducing the question of who is elected to a problem of mathematics," the decision to employ it was made with an awareness of the stakes in prestige to be won or lost.[51] "When, as often happens, a candidate runs second in the returns all evening," Morgan wrote, "it does take nerve to keep putting out the statement that he will come in first on the full returns in the morning."[52] Perhaps for that reason, Taylor's method was not automatically adopted elsewhere – despite its apparent power as a forecasting tool.

[50] Morgan, *Charles H. Taylor*, 123-129; Lyons, *Newspaper Story*, 104-106.

[51] Morgan, *Charles H. Taylor*, 123-129.

[52] Ibid.

Morgan gave an account of Taylor's attempt at one point to organize a nationwide

network of newspapers that would follow his system and band together for better

collective forecasting power. But, wrote Morgan, "Having no experience to sustain their

faith in the scheme, his pupils lost their courage and patience when the test came, and

they reverted to their old unscientific method of computing."[53] Even as Morgan penned

his description of the Taylor system in 1923, the principles on which it was based were

still not the obvious choice everywhere, which left Morgan perplexed at the result. He

saw a continuing pattern of post-election confusion that could take days to resolve in

some states. "Now that the telephone is everywhere, one voting precinct is no more

remote than another from a newspaper office that goes after it and keeps after it, as the

Globe does, until it has waked the sleepiest hamlet in the hills," Morgan wrote. "Once a

fair sample is obtained of how the people voted, General Taylor's system of analysis

discloses, almost with the exactness of a chemical test, the total vote of a State."[54]

　　　Morgan recited a number of occasions over Taylor's tenure in which the

publisher's system had given the *Globe* a jump on its competitors or saved the paper from

inaccurate forecasts that many other papers were making based on a less rigorous

approach. These included the state election of 1892, when the incumbent Massachusetts

governor waited through the night at the *Globe* to see the paper correctly forecast his

narrow reelection. And there was the presidential race of 1916, when Taylor's

understanding of the evolving national vote led him to resist joining the tide of papers

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[53] Ibid.

[54] Ibid.

announcing mistakenly, before enough of the California vote was known, that Charles

Evans Hughes had defeated Woodrow Wilson.[55]

The *Globe* system of using what would later be known as "key precincts" to make

judgments about the outcome of an election from early returns has been described by

Thomas Littlewood, a historian of the "horse-race" style of political reporting, as "the

single most important methodological advance in the history of electoral journalism…

The concept which underlies key-precinct analysis – leaping from partial information to a

broader conclusion – is central to the practice of horse-race journalism, past and

present."[56] This general methodology – using the votes coming in from specially selected

areas and comparing the results to historical data for the same areas – provided the

foundation of election-night forecasting practices that survived to 1952 and beyond.[57]

And even when the practice of exit-polling – scientific surveys of voters on election day

– came to dominate election-night forecasting in the latter 20th century, the principle of

using vote counts from selected areas and comparing them to expectations based on

historical data would constitute a powerful line of continuity in election coverage.[58]

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[55] Ibid.

[56] Littlewood, *Calling Elections,* 12-14.

[57] Max A, Woodbury, the chief architect of the prediction methodology employed by the UNIVAC on election night in 1952, said in a speech several years later that computer use on election was as an extension of "common sense considerations used in the past"; Max A. Woodbury, "Model Making Problems in Election Forecasting," *Proceedings of the Third Annual Computer Applications Symposium*, Oct. 9-10, 1956 (Chicago: Armour Research Foundation of Illinois Institute of Technology, 1956), 16-19.

[58] Another notable example methodical election-night forecasting was the system employed by Chester S. Lord, managing editor of the *New York Sun* from 1880 to 1913. The key to this system was a special chart. Prepared in advance, it would be employed on election night to make forecasts when returns were available for only some of the voting districts, using historical data at the district level in and around the city and the state. This system "saved time when time was of the greatest value" and provided an opportunity to beat the competition. It was described by a journalist of that era, Alexander McD. Stoddart, in "How the Newspapers Tell the Story of Election Day, *Outlook*, Nov. 8, 1916, 566ff. Lord's tenure at the *Sun,* with additional detail about his election-night system, is described in Frank Michael O'Brien, *The Story of the Sun, New York, 1833-1918* (New York: George H. Doran Company, 1918), 326-327, 372ff. O'Brien also

Collaboration with Experts for Calculation

Accounts of election-night reporting and forecasting in the century before 1952 provide abundant references suggesting that the use of outside experts for calculation – together with various mathematical tools – were recurrent features of the culture of election-night journalism. Sometimes the newsroom would borrow these experts from other offices of the newspaper. At the *Boston Globe*, Taylor and Morgan borrowed the services of bookkeepers and accountants from the newspaper's business office – known at the *Globe* as the "slide-rule men," or, less formally, the "slide-rule boys."[59] A Chicago newspaper editor wrote in 1892 that "Election night finds a newspaper office equipped with skilled accountants like a bank."[60]

The source of the mathematical corps employed at the *New York Herald* on election night in 1890 was not specified, but they were described as "expert accountants – no better can be found in the city of New York."[61] Ten were employed, along with 60 "tally clerks," arranged at long tables in a cavernous, block-long room at the *Herald* building. A detailed drawing of them – formally attired, their heads down in concentration as they worked with pencil and paper – was featured prominently in the *Herald's* extensive report on its election-night exploits. The accountants are the

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notes that when "the telephone was just coming into general use for transmission of news … Lord saw its possibilities on election night," and worked out arrangements for reliable correspondents stationed in counties around the state to report in at specific times during the night with their "best estimate" of the vote in their area (p. 374).

[59] Lyons, *Newspaper Story,* 105. Lyons worked at the *Globe* from 1919 to 1946 and was curator of the Nieman Fellowships at Harvard.

[60] Abbot, "How the Returns Come In," 876.

[61] "How the Herald Gets Election Returns," *New York Herald*, New York, N.Y., Nov. 9, 1890, 16.

specialists here. They are described as "lightning calculators."[62] The presence of the

experts served multiple purposes, just as computing equipment would later – doing the

job at hand while adding both to the mystique of the election-night process and the

prestige of the journalists who organized it.[63]

A succession of devices and machines that served as increasingly sophisticated

aids to calculation appeared throughout the 19th century and 20th century before the

advent of computers.[64] Accounts make clear that along with experts, these machines

might be borrowed on election night for newsroom calculations. In 1905, Melville E.

Stone, manager of the Associated Press, provided an example in an article on the

workings of the wire service for *Century Illustrated Magazine*.[65] The work of election

day, he wrote, was "mapped out in advance with scrupulous care," and an army of

Associated Press correspondents and headquarters staff were "augmented by the

employment of expert accountants and adding-machines from the local banks."[66]

A photograph from the early 20th century in the computing-history archives at the

Charles Babbage Institute – and an apparently related magazine advertisement for adding

machines – suggest that newspaper work on election night could advance more than just

the agendas of the journalists. The agendas of experts and technologists in the realm of

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[62] Ibid.

[63] Also critical to the whole arrangement was a system – akin to the one at the *Globe* – involving duplicate pages of color-coded paper, given as "blanks" to reporters to fill in at the voting precincts, conveyed by uniformed messengers to the newsroom, and shuttled efficiently, by virtue of those codes, to the right table for inclusion in the tallies for particular races. The results were assembled into charts and conveyed to the massive composing room, itself featured in a detailed drawing showing row after row of busy men arrayed in front of trays of metal type.

[64] See, for example, Peggy A. Kidwell and Paul E. Ceruzzi, *Landmarks in Digital Computing: A Smithsonian Pictorial History* (Washington, D.C.: Smithsonian Institution Press, 1994).

[65] Melville E. Stone, "The Associated Press," *Century Illustrated Magazine* LXX, No. 3, July 1905, 379ff.

[66] Ibid.

calculation could be advanced at the same time. The photograph depicts a long row of tables on which there are visible at least 18 adding machines with narrow rolls of paper attached at the back. [67] Behind these tables there are dozens of men, a row of them seated and the rest standing, dressed in coats, ties and an assortment of hats, plus a mustachioed man in a uniform standing at the back by a door. All are staring at the camera. Across the top, in large type, is a caption: "Burroughs Breaks Election Records in Buffalo." This may well be the same or a similar event referenced in a magazine advertisement for Burroughs that appeared in January 1911.[68] The ad asserted the infallibility of Burroughs adding machines as an answer to the impossibility of absolute reliability in calculation by humans. It touted one event in particular, the performance of the company's machines on election night:

> The Burroughs is beginning to serve the Public just as it does the Individual. Here is an item from the Buffalo "Express":
>
> "Owing to the voting-machines and the excellent system devised by the newspapers for prompt collection of returns, Buffalo now leads the country on election night. It is the only real big city that gives its votes complete on the main offices of a ticket before 6 P.M., and few of the other cities that use the machines can rival Buffalo in the speed with which the returns are assembled. Much of the credit in this work is due to the compilers who handle the adding-machines. The long battery of machines ranged in the City-Hall basement on election night, and the

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[67] "Burroughs Breaks Election Records in Buffalo," photograph, Box 4, Folder: Elections (using Burroughs Equipment) ca. 1900, 1960, 1964, CBI 90, Burroughs – Quick Reference Photos, Burroughs Computer Corporation Records, Charles Babbage Institute (hereafter cited as CBI), University of Minnesota Libraries, Minneapolis, Minn. Though the photograph is not dated, the American Arithmometer Company changed its name to the Burroughs Adding Machine Company in 1905 after moving from St. Louis to Detroit in 1904; "Burroughs Corporation Records, 1880-1998, Finding Aid," CBI, http://special.lib.umn.edu/findaid/xml/cbi00090a.xml.

[68] "The Back of the Book," advertisement for Burroughs Adding Machine Co., *Fra: A Journal of Affirmation*, January 1911, reproduced in the reprint, *Fra Magazine: Exponent of American Philosophy, January 1911 to June 1911* (Kessinger Publishing, 2003), http://books.google.com/books?id=BGXRC7GAzv4C&printsec=frontcover&dq=fra+magazine+1911#PPR 1,M1.

machines used by the "Express" in compiling its own city tables and in collecting the vote of the towns, were Burroughs Adding Machines."[69]

In a similar display of the linked agendas of newspapers and technologists, the *Illinois State Journal* gave a nod in 1912 to the Remington Typewriter Company for providing a typewriter with "the marvelous Wahl adding machine attachment," a device allowing the newspaper for the "first time in the history of Springfield" to provide "table totals" on the morning after the election.[70] And in 1913, the *Duluth News-Tribune* in Minnesota reported on the aftermath of a hotly-contested municipal ballot question dealing with liquor control. As hundreds of people called the paper after the polls closed, results were "furnished as fast as R.G. Roberts, city salesman for the Remington Typewriter company made rapid fire totals with a Remington-Wahl adding and subtracting typewriter from the bulletins flashed into the office from each precinct."[71]

Getting the Word Out on Election Night

Well before the era of radio and television broadcasting, the public did not need to wait until newspapers' morning editions to learn of election results. Editors and publishers developed increasingly ingenious means for getting the word out, satisfying public interest and allowing newspapers to remain at the center of attention on election night, even if they did not gain financially in delivering the news by these means. This was a special night, and it was a chance for newspaper owners and staff to assert their importance. Prestige was attached to relaying news as it came in and trends as they

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[69] Ibid.

[70] The *Illinois State Journal*, Nov. 7, 1912, 2, cited by Matheson, *Steam Packet to Magic Lantern*, 131.

[71] "Thousands Phone to Learn Result," *Duluth (Minn.) News-Tribune*, Sept. 17, 1913, 2.

developed, and the practices of posting returns quickly evolved along with the ability to gather returns and project winners. Technological novelty would come to have an increasingly important role in these arrangements for both the display of returns and judgments about the outcome. These technologies were promoted and celebrated in print. They helped attract crowds. And the size of the crowds they attracted was also celebrated in print, serving to demonstrate a newspaper's importance in the community.

Although the telegraph made it possible by the middle of the 19th century to get news from far-flung places on election night, the practice of newspapers posting vote counts on bulletin boards as returns dribbled in began even before the era of the telegraph.[72] The arrival of the telegraph helped establish the street outside local newspaper offices as the place to get news on election night, and in communities with more than one newspaper, there was fierce competition to get the word out first.[73] With telegraph wires reaching coast-to-coast by 1861, there was greater likelihood of having enough data available on election night to declare a victor before the morning papers hit the streets. This possibility set the stage for an era of remarkable inventiveness and showmanship, forging and strengthening a link between election-night news, technology, and entertainment.

As the likelihood of getting definitive news on election night grew, so did the size of crowds waiting to receive it. New technologies – or novel applications of existing

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[72] The *Daily Missouri Republican*, for example, reported on Nov. 2, 1840, that "all returns sent to us will be spread on the Bulletin Board;" cited by Kelly, *Election Day,* 87.

[73] Littlewood, *Calling Elections*, 40. In his biography of James Gordon Bennett, Oliver Carlson describes the scene outside the *New York Herald* on election night, 1856, as one of "milling crowds" that "surged about the newspaper offices" to hear word of the election. Inside, the staff labored to "keep their reputation of always being 'first with the news'"; Oliver Carlson, *The Man Who Made News: James Gordon Bennett* (New York: Duell, Sloan and Pearce, 1942), 264; also cited by Littlewood, *Calling Elections*, 40.

technologies – were touted for their ability to display returns to people who could not get close enough to read the words posted on bulletin boards or to hear returns as they were called out. Before the electric light, newspapers began employing projection systems that went by the names "magic lantern" and "stereopticon." These were means of projecting images or photographs made on plates of glass, or "transparencies." A powerful light beam, typically produced by heating a block of calcium, was passed through these plates. Aided by lenses, the projection system cast a magnified image on a large surface.[74] There were reports in the 1860s of projected images 24 feet in diameter being displayed on a massive stretch of canvas. Improved versions of these devices surfaced from time to time, credited to various inventors, and in 1863, the *New York Times* referred to one as a leading amusement of the day. Dubbed a "philosophical and scientific novelty" and "one of the most curious and instructive inventions of the age," it attracted audiences who came to see the lifelike scenes that it generated.[75] The use of such systems to project election returns for the crowds waiting outside newspaper offices – and to dazzle them in the process – dates back to at least 1860, when references appear to a display outside the offices of the *New York Herald*.[76]

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[74] According to historian Tom Gunning, projection systems of this sort followed certain discoveries in optics that dated back to the 17th century, and by the 19th century they had become an important visual medium. See: Tom Gunning, "Cinema and its Ancestors: The Magic of Motion," Research at Chicago, University of Chicago, http://research.uchicago.edu/highlights/item.php?id=13. For accounts of the stereopticon as a form of entertainment or education in the mid-19th century, see, for example: "The Stereopticon," *Arthur's Home Magazine*, April 1861, 253; "Lanterns Arranged For the New Oxygen Limelight…" advertisement, *Scientific American* IV, no. 18 (May 4, 1861), 287; and "The Stereopticon," *Saturday Evening Post*, Jan. 5, 1861, 2. In his history of technologies for the display of images in advance of the cinema, *The Magician and the Cinema* (New York: Oxford University Press, 1981), Erik Barnouw gives a prominent place to the magic lantern, which was used for lectures, magic shows and entertainment in the latter part of the 19th century, which he calls "a period of visual novelties and enchantments" (p. 38).

[75] "Amusements," *New York Times*, June 15, 1863, 4; "Amusements," *New York Times*, June 29, 1863, 1.

[76] "The Finale; The Scene Around The Herald Office," *New York Herald*, Nov. 7, 1860, 3. This article speaks of a crowd of thousands getting returns that appeared on "transparencies" illuminated by "the gas light behind," and also that a "very powerful Drummond light" was also used. Though it is not clear

In early October 1872, the *Times* recounted in a front-page article how crowds intensely interested in the elections in Pennsylvania, Indiana, and Ohio gathered on a street corner where the newspaper's returns were to be projected courtesy of the Stereopticon Advertising Company. This "novel method of advertisement," wrote the *Times*, "found general favor with the throngs of merchants, brokers and professional gentlemen packed on the sidewalks and crossings that evening."[77] The story recounted the merging of human and technological systems. A telegraph wire was laid from the *Times* building at Printing House Square up Broadway to the stereopticon company's office on 23rd Street. From there, an "attaché of the paper" worked hand in hand with the stereopticon operators to generate accurate and timely displays. Images and sayings were projected, too, including these to end the night: "Washington, Lincoln, patriotic mottoes and the Goddess of Liberty."[78] The crowd that gathered reflected well on the *Times*. These people were of "the best classes," an "assemblage of the wealthy, well-to-do and commercial citizens of New York," and "there was no need of Police, except to look after pick-pockets, of whom it is only natural to suppose there would be a great many where well-filled wallets and costly watches were so numerous."[79] On election night in November, the *Times*'s collaboration with the stereopticon company was repeated, once

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whether this form of light, also from heated calcium, was used in connection with the images or to provide light for the street scene, its use "seemed to give great satisfaction to the crowd." On the same night, the *New-York Tribune* provided election news to a smaller crowd – said to be in the hundreds – by reading returns out from the "counter" of the newspaper offices; see "Before The Tribune Office," in "Election In This City," *New-York Tribune*, Nov. 7, 1860, 4. Littlewood cites election night 1860 as the first use by "New York City papers" of a "primitive version of the stereopticon projector to enlarge their election bulletins across the entire side of a building" (*Calling Elections*, 47).

[77] "Our Bulletin," *New York Times*, Oct. 10, 1872, 1.

[78] Ibid.

[79] Ibid.

again merging news and entertainment values. The *Times* arranged for the display of a "special artist's" cartoons of notable people and incidents from the campaign, which kept the crowd "in excellent humor." [80] The *Times* reported that "the Stereopticon worked like a charm, and held its beholders till its work was well done."[81]

At Park Row in lower Manhattan, the center of city's newspaper publishing industry in the latter 19th century, New Yorkers would find papers vying with each other through competing election-night displays and next-day accounts.[82] The newspapers also established outposts around the city for displaying returns on election night, as the *Herald* did in 1890, sending returns by special telegraph wire from the newsroom to stereopticon operators at its offices on 23rd Street and in Brooklyn.[83] After state and local elections in 1895, the *New York Times* boasted that it had provided returns accurately and more promptly on election night than the other New York publishers, and that it's display – using five stereopticons casting images on "an immense cloth … stretched across the face of The Times Building" – was of such a size and clarity that it was visible at a much greater distance, prompting defections from a crowd that had been watching the "futile" efforts of another unnamed paper.[84] Just three years earlier, the *Times* had scoffed at competing newspapers for over-attention to such election-night diversions as displays

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[80] "Receiving the News," *New York Times*, Nov. 6, 1872, 8.

[81] Ibid.

[82] For example, for the 1897 elections in New York, the *Times* reported that seven newspapers offered competing displays of election bulletins from their buildings on the east side of Park Row; "In Front of the Bulletins," *New York Times*, Nov. 3, 1897, 5. Brewin also describes the evolution of the "election night spectacular" during the Gilded Age in another major city, Philadelphia, where newspapers making the transition from primarily partisan to primarily commercial enterprises competed to outdo each other in the showiness of their displays, the speed of their reporting, and the size of their crowds, all recounted in self-promotional stories; see *The History of Election Day in Philadelphia,* 208-216.

[83] "How the Herald Gets Election Returns," *New York Herald*, Nov. 9, 1890, 16.

[84] "News Promptly Given," *New York Times*, Nov. 6, 1895, 8.

with "caricatures and pictures of ostrich farming."[85] Now, in 1895, the *Times* noted that

"In order to keep the crowd in good temper all the while, The New York Times had

prepared a pictorial entertainment to go with the news."[86] This included portraits of

leading political figures-and "a series of handsome colored pictures of familiar works of

art, humorous pictures, and timely cartoons suitable for the occasion, which were

received with great delight."[87]

The next year, 1896, when the *New York Times* was acquired by Adolph S. Ochs,

the symbolic power of election coverage was clear to the 38-year-old publisher. The

newspaper had been failing financially when he bought it, and its anemic circulation was

dwarfed by a host of more popular and sensation-minded competitors.[88] Ochs made what

was, considering his limited resources, the "daring splurge" of spending $2,000 on the

first election to be covered by the *Times* under his stewardship, according to Meyer

Berger's 1951 history of the newspaper.[89] Berger, a *Times* reporter, described what Ochs

witnessed on the eve of the 1896 election as he stepped out to see what his Park Row

competitors were doing and what was going on three miles to the north, where the *Herald*

had taken up new quarters.

> The night before the balloting he walked from lower
> Manhattan to Herald Square, a little man in the throng of bustled
> women in gigantic hats escorted by brown-derbied and

[85] "About the Bulletins; Printing House Square and Park Row Packed With Citizens," *New York Times,* Nov. 9, 1892, 3.

[86] "News Promptly Given," *New York Times*, Nov. 6, 1895, 8.

[87] Ibid.

[88] Meyer Berger, *The Story of The New York Times, 1851-1951* (New York: Simon and Schuster, 1951), 569; Doris Faber, *Printer's Devil to Publisher: Adolph S. Ochs of The New York Times* (Hensonville, N.Y.: Black Dome Press, 1996 [originally published 1963]), 88-89.

[89] Berger, *The Story of The New York Times*, 120.

mustachioed gallants in fawn-colored top coats. He saw that
Hearst's Journal had built a bandstand in front of its main office
for musicians to blow brassy serenade for returns watchers in front
of The Journal bulletin board and had hired chalk artists to
entertain the throng during intermissions. The World, he noticed,
had put up an eighty-foot screen on the Franklin Street side of the
gold-domed tower.[90]

While Ochs did not have the means to match his competitors, he did have plans to display

the returns both outside his building and in Madison Square, where the *Times* had erected

a 20-foot screen under the now-famous slogan it had earlier installed there in electric

lights, "All the News That's Fit to Print." Ochs was so attuned to the importance of the

election-night displays that he took a hand in working out the technical details. He

proposed the idea of writing the returns on a "gelatine" sheet that would avoid blurring,

and he would later complain that one of his stereopticon operators had "spread the idea

all over town," where "all the newspapers copied it."[91] Although he was outdone on

election night at Park Row, where competing papers were trying to win the attention of

tens of thousands of people who had gathered, he was reportedly pleased to find an even

larger crowd when he made is way up to Madison Square to have a look at his

newspaper's display there.[92] The next year, 1897, the *Times* reported that in addition to

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[90] Berger, *The Story of The New York Times,* 120-121.Berger's detailed history of the *Times* does not have
footnotes or a description of sources. It is evident from the text that he had access to Ochs's papers and
correspondence.

[91] Cited in Berger*, The Story of The New York Times,* 121.

[92] Berger, *The Story of The New York Times, 1851-1951*, 121. In advance of the election, the *Times* also ran
a notice that the text appearing in its Madison Square stereopticon display would be printed by typewriter
for maximum legibility; "The Times's Election Returns," *New York Times*, Nov. 1, 1896, 12. Ochs also got
an election-related boost in prestige a few days later when he turned down more than $33,000 from the city,
what would have been his share of a contract authorized by the Board of Alderman to have six newspapers
print the official returns from all 1,391 precincts. The *Times* editorialized against the contract as wasteful,
estimating that it would cost the city $200,000. Ochs shamed the city into reducing the scope of the
contract and won kudos for his principled stand; Berger, *The Story of The New York Times, 1851-1951*,

competing displays at Park Row, "nearly all the newspapers" chose Madison Square – the "great meeting ground of the people" – for displays of election returns: "the fronts of the tall buildings on every side had been pre-empted for stereopticon screens."[93]

Broadcasting Returns Before Radio

Starting in the late 19th century, a succession of technological innovations was deployed on election nights to disseminate returns at an even greater distance than the stereopticon displays could be seen. In fact, well before the advent of radio, news seekers in a number of American cities no longer found it necessary to turn out on a cold and dreary November night to find out who had won. Newspapers, press associations, telegraph companies, and newer entrants in long-distance communication – the telephone companies and the manufacturers of powerful electric lights – engaged in something of an election-night free-for-all, sometimes collaborating, sometimes competing, in innovative combinations of technology and human endeavor to get out the election-night news. And as would happen repeatedly during the course of American history, election night would serve in this period as a crucible for the merging of new technology and news. In her study of experiments with and responses to electric communication during the late 19th century, historian Carolyn Marvin wrote, "The distribution of presidential election returns in the late nineteenth century was the most ambitiously organized

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121-122; W. Joseph Campbell, *The Year That Defined American Journalism: 1897 and the Clash of Paradigms* (New York: Routledge, 2006), 92.

[93] "Throngs Eager for News" and "In Front of the Bulletins, *New York Times*, Nov. 3, 1897, 5.

American effort to use new electric technologies to deliver the news."[94] In 1888, the

president of American Bell Telephone Company and his guests heard election news via

special line at his home in Boston.[95] Four years later, telephone companies were

transmitting returns gathered from a variety of sources between Chicago and New York,

with bulletins then being phoned to clubs in both cities and to the headquarters of both

parties in New York.[96] Arrangements were even more elaborate in 1896 as long-distance

telephone lines spread to more parts of the country. In advance of the elections, the *New

York Times* described in great detail what it was calling a "contest of the wires."[97] The

telegraph and telephone companies, reported the *Times*, were "going to greater expense"

than before "to keep pace with popular demand for news." [98]   In addition to special wires

that would be run to clubs, hotels, cafés, theaters, and bars, the well-heeled were planning

private election parties and arranging to run special wires to their homes for the occasion.

While the telegraph companies were not newcomers to the gathering and transmission of

election news, the *Times* noted that the establishment of a nationwide organization to do

the same thing by long-distance telephone was a novelty – and as such, "the experiment

will be watched with interest."[99] Not to be outdone, newspapers were also experimenting

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[94] Marvin, *When Old Technologies Were New,* 217. Marvin also discusses the use of lights to broadcast election news at p. 186. She discusses the mix of news and entertainment on election night in Marvin, "Dazzling the Multitude," 211-212.

[95] Marvin, *When Old Technologies Were New*, 218.

[96] "Election Returns by Telephone and Telegraph," *Western Electrician*, Nov. 26, 1892, 275; and Marvin, *When Old Technologies Were New*, 218. The source of returns in Chicago was the office of the City Press association in city hall; on the Chicago end, the arrangements for the transmissions were made by American Telephone & Telegraph (per the account in *Western Electrician*).

[97] "Contest of the Wires; Will Compete in Obtaining Election Returns," *New York Times*, Oct. 29, 1896, 16.

[98] Ibid.

[99] Ibid.

with visual means of transmitting returns for miles around. Powerful new electric lights were adapted for use on election night both as means of communication and as symbols of status. Newspapers were using searchlights mounted atop their own buildings or other tall structures in this way as early as 1891, and the practice continued into the 20th century and even right up to the 1952 election.[100]

The audiences for these returns were not merely passive recipients. Systems for dissemination of election returns at a distance merged the showcasing of technology with the active participation of the news consumer through the use of codes necessary to decipher the bulletins.   These codes might involve the direction in which a light was cast, its duration, its frequency, or its color. In advance of the elections in cities where searchlights were installed for this purpose – including New York, Chicago, Boston, and San Francisco – newspapers would publish the codes in advance. Typical were the codes published in the run-up to the 1904 election by the *New York Times*. From the summit of its new tower in Times Square – some "357 feet, 10¾ inches above the curb" – the *Times* claimed that its pronouncement of the outcome would be visible from 30 miles away.[101] Steady lights to the east or west would signal the victor in the Presidential contest – west for the Republican incumbent, Theodore Roosevelt, or east for his Democratic challenger, Judge Alton Parker. Steady lights to the north or south would flash the outcome of the governor's race. A light to the west moving up and down would

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[100] Marvin, *When Old Technologies Were New,* 186; Marvin, "Dazzling the Multitude," 211-212; Littlewood, *Calling Elections*, 58-59. For the continued use of lights on election night to 1952, see Meyer Berger, "Old Times Square Tradition Dies; usual Election Night Uproar Gone," *New York Times*, Nov. 5, 1952, 24.

[101] "Election Results By Times Building Flash," *New York Times*, Nov. 6, 1904, 3. The same code was repeated in a story the day before the election and in an advertisement, including a diagram, that ran on election day: "To-night; Election Returns at Times Building, Times Square," advertisement, *New York Times*, Nov. 8, 1904, 9.

announce a Republican Congress, and a similar movement of the light in the east would mean the Democrats had achieved a majority. "With this code before him," wrote the Times, "the voter who wants to find out how things are going and who doesn't want to stay out all night at a telegraph office, either in the city or out of town, can don his negligée and from an advantageous window in his flat or his house ascertain the important results."[102] The post-election paper does not contain a report on the use of the searchlight.[103] But the practice of using coded searchlight messages continued for decades at Times Square – as did the associated self-promotion and detailed explanations of the lighting mechanisms involved. Before the 1906 election, for example, *The Times* claimed to have installed atop its tower "the largest searchlight in the city," one of the same "type supplied to the battleships of the United States Navy for service in war."[104] There was a plug for the light's manufacturer in Nuremburg and plenty of technical detail, from the "parabolic ground glass silver-plated mirror" to the "positive and negative carbons [that] are fed automatically at the same time."[105]

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[102] "Election Results By Times Building Flash," *New York Times*, Nov. 6, 1904, 3.

[103] A *New York Times* profile of a British visitor to Manhattan describes him as "watching the giant searchlight bulletins from his window" in a Manhattan Hotel on election night, but the source of those bulletins is not reported; "American Politics Amazes Gladstone's Old Friend," *New York Times*, Nov. 13, 1904, Sunday Magazine, 4. A news story in 1942 mentioned that on election night 1904, "Theodore Roosevelt's election over Alton B. Parker was flashed to the skies by lights from the then new Times Tower"; "Election Result Signals of Times Banned by War," *New York Times*, Nov. 1, 1942, 41.

[104] "Times Will Flash the Result," *New York Times*, Nov. 4, 1906, 2. A competing newspaper publisher, James Gordon Bennett of the *New York Herald*, was said in a 1909 profile to insist that on election nights, the *Herald's* signal light had to be located on the highest tower in New York; George Jean Nathan, "James Gordon Bennett; The Monte Cristo of Modern Journalism," in *Outing Magazine* 53, no. 6 (March 1909), 690ff.

[105] "Times Will Flash the Result," *New York Times*, Nov. 4, 1906, 2.

One of the most ambitious displays – accompanied by a complicated set of codes – was that of the *New York Tribune* in 1896.[106] Readers were advised to "keep this code" when it was printed ahead of time, and they certainly would have needed it.[107] A string of colored lights was to be hoisted aloft – to a "point 500 feet above The Tribune Building" – by a set of specially-built kites, with the *Tribune* giving the manufacturer a nod in print for his "skill and experience."[108] There were dozens of specific codes to indicate which of three candidates was ahead in each one of the 45 states and New York City. Those with red lights were for Republican William McKinley. Green lights were for Democrat William Jennings Bryan, and orange lights designated one of the third-party candidates, John M. Palmer, the former governor of Illinois. Each state would be indicated by combinations of varying numbers of white lights – from one to nine of them – divided in the string at various spots by the colored lights to indicate which candidate had the majority in that state. If a state had been a "doubtful and important" one, the signal would be given a second time as "confirmation."[109] There were codes for nationwide and regional trends, and indicators for both partial and final results.

The *Tribune* left no doubt that both technological showmanship and timely transmission of news were paramount values at work in its elaborate plan. On the

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[106] The plan and its outcome are described in these stories: "Signals in the Sky," *New York Tribune*, Nov. 1, 1896, 1; "Flashing Out the Tidings," *New York Tribune*, Nov. 3, 1896, 7; and "Vast Crowds Cheer," *New York Tribune*, Nov. 4, 1896, 5.

[107] "Signals in the Sky," *New York Tribune*, Nov. 1, 1896, 1.

[108] The manufacturer, William E. Eddy of Bayone, N.J., was acknowledged in a story the day after the election ("Vast Crowds Cheer," *New York Tribune*, Nov. 4, 1896, 5). In the same story, the *Tribune* also gave a nod to the manufacturer of a searchlight installed atop its tower. This light does not appear to have been associated with any codes, but its "shafts of brilliant light" were said to make "places where it rested as light as day." The technological innovation associated with this light, the *Tribune* reported, was that the manager of the Rushmore Dynamo Works in Jersey City had been able to bring down the cost by improvements in certain methods and machinery involved in its production.

[109] Ibid.

Sunday before the election, in a prominent, front-page announcement under the bold headline "SIGNALS IN THE SKY," the newspaper introduced its code scheme this way: "Election night in this city will be notable for many proofs of unusual and profound interest; but no other outgrowth of modern devices to please the eye, while conveying valuable and accurate information to a multitude of people, will probably attract more attention than the signals in the sky which The Tribune will display above The Tribune Building that night, to carry thirty miles away the news of the election returns." On the afternoon of election day, the *Tribune* reported launching nine kites flown on a single line and hauling up an American flag measuring 15 by 21 feet. But then the weather ceased to cooperate. The kites came down and the coded strings of lights were raised above the building on halyards. [110]

Elsewhere, the transmission of coded returns on election nights was not limited to visual displays. Although thousands of people gathered around the buildings of competing newspaper and other locations in downtown St. Paul, Minnesota, on election night 1896, far greater numbers may have learned of the results by *hearing* them from miles away.[111] The *St. Paul Dispatch* arranged with the Northern Steamship Company to borrow a whistle system from the forward stack of a Great Lakes passenger liner, the *North West*. When launched two years earlier to carry passengers in luxury between

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[110] In cities with competing newspapers, plans for coded displays on election night could prompt fierce competition and even attempts at interference. One example comes from Chicago in 1900. Five days before the election, the *Chicago Tribune* ran a front-page item – "Bombs to Signal News" – about its plan to use color-coded fireworks to indicate voting trends. But the day before the election, the *Tribune* announced that it was ditching its plan because of the "usurpation and reversal of its signals by a Democratic newspaper," leaving no time to locate different-colored fireworks. This is recounted by Matheson, *Steam Packet to Magic Lantern*, 133-134, based on accounts in the *Chicago Tribune* on Nov. 1, 5 and 6, 1900.

[111] Thomas C. Buckley, "Whistles, Crowds and Free Silver: St. Paul's Noisy Election Night in 1896," *Ramsey County History* 27, no. 3 (Fall 1992), 13-17.

Duluth and Buffalo, the *North West* was the largest vessel on the lakes – measuring some 384 feet long and 44 feet wide. The fog whistle on the forward stack was said to be almost as big as a man. Powered by the ship's impressive boilers, it could be heard 15 miles away. While the ship was berthed in Duluth for the winter, the whistle was transported to St. Paul for election night. A notice in the pro-McKinley *Dispatch* provided the codes: "Succession of Sharp, Short Toots If Returns Favor McKinley. A Long, Dismal Wail If Returns Favor Bryan."[112] Readers were assured that the sound would carry so far that no effort would be required to hear it: "The tremendous blast will cleave the air like a salvo of artillery and carry the message of the election."[113]

Potent Election-Night Mix: News, Entertainment, and Showmanship

In the tumultuous combination of technological enthusiasm, national development, commercial boosterism, and showmanship that marked the latter 19th and early 20th centuries, newspapers were not alone in seeing the possibilities presented by election night. [114] A range of establishments that provided public amusements also hitched themselves to election night's main news event. In 1876, an ad for "The Great New-York Aquarium" boasted that in addition to a long list of attractions, from "six rare

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[112] "HEAR THE WHISTLE," advertisement,, *St. Paul Dispatch*, Nov. 3, 1896, reproduced in Buckley, "Whistles, Crowds and Free Silver," 16.

[113] Ibid.

[114] The technological showmanship on election night can be seen against the backdrop of an era in which historians have demonstrated the enthusiasm for and role of technology in the United States as a major element in national development. See, for example, Thomas J. Misa, *A Nation of Steel: The Making of Modern America, 1865-1925* (Baltimore: The Johns Hopkins University Press, 1995), and Thomas P. Hughes, *American Genesis: A History of the American Genius for Invention* (New York: Penguin, 1989). This is not to say that the technological enthusiasm of the latter part of the 19th century was unbridled. It was not. Concerns were raised by some of intellectuals of the day, such as Henry Adams, who saw a time coming when humans would not be able to control the mechanical forces they had unleashed; see Robert V. Bruce, *The Launching of Modern American Science, 1846-1876* (New York: Alfred A. Knopf, 1987).

sea-horses" to "the living white whale," returns would be provided by "transparency," and a "special wire" would "afford … patrons the most authentic intelligence concerning the results of the great election."[115]   On the same day in 1876, an ad in New York for the "New and Greatest Show on Earth" assured prospective patrons that "P.T. Barnum has effected arrangements" to provide election returns.[116] In 1896, at Oscar Hammerstein's complex on Broadway and 44th Street, the showman was featuring comic opera, vaudeville, acrobats, and dancing girls from Paris – and election returns to be read every half hour on all stages and shown on a "gigantic" screen.[117] Theaters, in fact, were common venues for returns. Their ads typically did not specify the source of the election news beyond the mention of a "special wire."[118] But with newspapers, press associations, telegraph companies, and later telephone companies all involved in gathering returns on election night, there were certainly plenty of sources. And in addition to newspaper ads, theaters also touted their election night plans on large sheets pasted side by side with campaign posters. In 1916, a sheet for the Standard, an establishment in St. Louis, promised "Parisian Flirts" – "2 Big Shows" – and "Election Returns by Special Wire."[119]

Against this backdrop of culture-wide competition for attention on election night, newspapers showcased technological innovations of all sorts – not just for a role in transmitting the news, but as means of entertainment and as objects of wonder in themselves. In 1896, for example, a new device for projecting moving images – the

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[115] "The Great New-York Aquarium," advertisement, *New York Times*, Nov. 7, 1876, 7.

[116] "P.T. Barnum's," advertisement, *New York Times*, Nov. 7, 1876, 7.

[117] "Olympia Theatre," advertisement, *New York Times*, Nov. 3, 1896, 7.

[118] See, for example, "Amusements," advertisements, *New York Times*, Nov. 7, 1894, 7.

[119] This sheet appears next to a Woodrow Wilson campaign poster that is the subject of a photograph in Bowman, *The History of The American Presidency*, 119.

"vitascope" – was used to delight and amaze crowds in New York and Chicago in between the presentation of election returns.[120] In 1906, the *New York Times* announced that among its election-night offerings – which included an improved means for projecting bulletins, a prodigious new searchlight for coded returns, moving pictures, and a live band – there would be something called the "Auxetophone," said to be the "last word in improvement of the phonograph."[121] Two years later, the *Times* was promoting its use of a device called the "telautograph" that would allow crowds in the street to watch cartoonist Hy Mayer at work, projecting his drawings as he made them.[122] The day after the election, the paper reported that crowds had, indeed, been held in fascination by the telautograph's "electrical writing."[123] And in 1920, the *St. Louis Post-Dispatch* orchestrated a rich confection of news and entertainment, wedded by technology, to assert its social, cultural, and political role as an essential player on election night.[124]

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[120] Marvin, *When Old Technologies Were New*, 221; Littlewood, *Calling Elections*, 55; Paul Young, "Media on Display: A Telegraphic History of Early American Cinema," in *New Media, 1740-1915*, Lisa Gitelman and Geoffrey B. Pingree, eds. (Cambridge, Mass.: The MIT Press, 2003), 239. The term "vitascope" was one of many newly-minted words that were used in this period to refer to devices that displayed moving pictures, testimony to the wonder and showmanship attached to them. An item that appeared in the *New York Times* on Jan, 28, 1898 ("Topics of the Times," p. 8) surveyed the field with a humorous take on the "mysterious impulse" that was leading to a proliferation of names for devices that were different only in "inconsequential details." The dozens of terms also included biograph, vitagraph, cinematograph, mutoscope, wonderscope and projectoscope (terms which can, indeed, be seen in articles and advertisements elsewhere in the *Times* and other publications of the day). A compendium of terms appeared in at least one other paper (the *Chicago Record* is mentioned as running such a list in early 1898; see Michael Quinion, "Mutoscope," World Wide Words, http://www.worldwidewords.org/weirdwords/ww-mut1.htm). The list of terms was repeated in "Scientific Notes and News," *Science*, New Series, vol. 8, no. 186 (July 22, 1898), 106-107, which noted that it could not vouch for all of them. Among the names listed were "lobsterscope" and "craboscope."

[121] "Times Will Flash the Result," *New York Times*, Nov. 4, 1906, 2.

[122] "The Times to Flash Election Results," *New York Times*, Nov. 3, 1908, 3.

[123] "Jam Times Square for Election News," *New York Times*, Nov. 4, 1908, 5.

[124] Stories outlining the themes here appear in the editions of Nov. 1 through 4, 1920. My attention was first drawn to the *Post-Dispatch* election-night arrangements by an anecdote in Kate Kelly, *Election Day: An American Holiday, An American History* (New York: Facts on File, 1991), 187-188.

While many of the movie theaters and burlesque houses in St. Louis were advertising that they would provide their audiences with election returns, the *Post-Dispatch* used its front page to announce the technological novelties to be used as part of its customary offering of election-night news and amusements.[125] Promised was the first public showing of "a motion picture made by X-ray process, showing movement of kneecap when knee is moved up and down, also the movement of wrist, jaw bone, elbow, etc."[126] Another innovation, the "Magnavox telemegaphone," proved so effective on election night, according to the *Post-Dispatch*, that the massive crowd, including those who were too far from the stereopticon screens to see the returns, had been "startled" to hear the returns "clearly and distinctly … above all street noises."[127] The paper transmitted returns by telephone to gatherings at schools and other indoor locations, aided by new "sound-multiplying devices."[128] And the *Post-Dispatch* teamed up with a local technologist to broadcast returns by way of a "wireless telephone" transmitting station.[129] Installed in a local residence just the day before the election, at a time when wireless transmission of

[125] Theater and burlesque ads appear under the headings "Amusements" and "Photo Play Theaters," *St. Louis Post-Dispatch*, Nov. 2, 1920, 22. The paper's plans are described in "Wireless Telephone to Carry Vote Returns" and "Post-Dispatch Election Bulletins to Be Furnished on 12th Street, at Armories and Public Schools," *St. Louis Post-Dispatch*, Nov. 2, 1920, 1; "Post-Dispatch Furnished Returns to Record Outdoor Crowd and at 23 Buildings," *St. Louis Post-Dispatch*, Nov. 3, 1920, 1; and "30,000 Got Election Returns at 20 Schools By Post-Dispatch Service," *St. Louis Post-Dispatch*, Nov. 3, 1920, 3. Another *Post-Dispatch* ad for its own "Big Show" appeared on page 12 of the same edition, along with a listing of the indoor venues where returns could be heard.

[126] "Post-Dispatch Election Bulletins to Be Furnished on 12th Street, at Armories and Public Schools," *St. Louis Post-Dispatch*, Nov. 2, 1920, 1

[127] "Post-Dispatch Furnished Returns to Record Outdoor Crowd and at 23 Buildings," *St. Louis Post-Dispatch*, Nov. 3, 1920, 1.

[128] "Post-Dispatch Election Bulletins to Be Furnished on 12th Street, at Armories and Public Schools," *St. Louis Post-Dispatch*, Nov. 2, 1920, 1. See also: "Post-Dispatch Furnished Returns to Record Outdoor Crowd and at 23 Buildings," *St. Louis Post-Dispatch*, Nov. 3, 1920, 1; and "30,000 Got Election Returns at 20 Schools By Post-Dispatch Service," *St. Louis Post-Dispatch*, Nov. 3, 1920, 3.

[129] "Wireless Telephone to Carry Vote Returns," *St. Louis Post-Dispatch*, Nov. 2, 1920, 1; see also, "Wireless Phone Relays Returns of Post-Dispatch," *St. Louis Post-Dispatch*, Nov. 3, 1920, 3.

voice and music was still a wonder, the transmitter was said to be one of the most

powerful in the nation, capable of reaching of 5,000 receivers within 1,000 miles of St.

Louis.

The Story of the Story

On the day after that 1920 election, the *Post-Dispatch* devoted at least three news

stories to itself – including one on the front page – illustrated by a full page of

photographs: how it had attracted the largest outdoor election-night crowd in St. Louis

history despite temperatures that fell to 40 degrees; how an estimated 30,000 people had

attended those 23-indoor venues for election-night news and amusements; how various

educational and civic leaders praised the *Post-Dispatch* – mentioned by name seven times

in one story – for an election-night role that provided a "forward step in community

service."[130] In one of these stories, the *Post-Dispatch* also claimed a place for itself in

communications history: "the first use of a wireless telephone in St. Louis" had been to

transmit *Post-Dispatch* election returns to a region stretching from North Dakota down to

Arkansas, states where returns were then relayed by wireless telegraph to recipients from

Canada to the Gulf of Mexico.[131] This sort of proud report placing newspapers in heroic

roles was not a new or isolated phenomenon in the coverage of elections. As far back as

[130] In the *Post-Dispatch* on Nov. 3, 1920: "Post-Dispatch Furnished Returns to Record Outdoor Crowd and at 23 Buildings," 1; "30,000 Got Election Returns at 20 Schools By Post-Dispatch Service," 3; "Wireless Phone Relays Returns of Post-Dispatch," 3; and "Immense Throngs in Twelfth Street and Auditoriums Get Post-Dispatch Election Bulletins," 29 [the "Daily Magazine" page of news photographs].

[131] "Wireless Phone Relays Returns of Post-Dispatch," *St. Louis Post-Dispatch*, Nov. 3, 1920, 3. The story also explained that individuals with wireless telegraph receivers could modify the devices to be able to hear the transmission of sound; music broadcast between returns was reported to be heard so clearly that a group of students with a receiver danced to it, as did several couples at a private party. The story further recounted confirmation from recipients who heard the broadcasts and relayed the returns to others who confirmed receiving them.

the early decades of the telegraph era, journalists had been telling what might be called

"the story of the story" about their election-night exploits.[132]

Key features of the "story of the story" over time included dramatic accounts of

newspapers' efforts to assemble, analyze, and disseminate the news – vote counts and

forecasts – in a timely and competitive fashion, all of it aided by organizational systems,

technology, and political expertise.   One of the more elaborate of these accounts

appeared in the *New York Herald* on the Sunday after the 1890 election.[133] The *Herald*

even promoted the story in advance, promising to reveal "the Inside Mysteries and

Mechanism of a Great Newspaper in Action."[134] The article occupied two thirds of a

page.[135] It was accompanied by six illustrations: a police station house where reporters

went to record the vote counts on special color-coded forms; uniformed messengers

delivering those forms to the newspaper; the expansive newsroom where vote totals were

computed by dozens of "tally clerks," "readers," and "expert accountants"; the

stereopticon room for display of fresh returns to crowds in the street; the massive

composing room where the paper was set in type, including dozens of columns of results

arranged in tables; and a host of delivery men as they hastened away from the *Herald*

with their bundles of newspapers. If lavishing so much space to a story about itself didn't

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[132] After this phenomenon of "the story of the story" became apparent to me from my initial survey of election stories in the 19th and 20th centuries, I discovered that John M. Matheson had used the phrase at the very end of his 1967 dissertation – *Steam Packet to Magic Lantern: A History of Election-Returns Coverage in Newspapers of Four Illinois Cities, 1836-1928* (170). In suggesting areas for further research, Matheson noted that while the systematic study of election-returns coverage had been neglected by journalism historians, the record left in the "the story of the story" is a means of understanding how election-returns coverage was produced. I am expanding that notion here to comment on the cultural significance of this phenomenon.

[133] "How the Herald Gets Election Returns," *New York Herald*, Nov. 9, 1890, 16.

[134] The ad – "To-morrow's Sunday Herald" – ran in a competing paper, the *New York Times,* Nov. 8, 1890, 8.

[135] "How the Herald Gets Election Returns," *New York Herald*, Nov. 9, 1890, 16.

send a clear enough message, the *Herald's* six-deck headline left no doubt about the point

– that a newspaper could and should be judged by the quality and content of its election-

night performance:

> HOW THE HERALD GETS
>   ELECTION RETURNS.
>   ——————
>
> Workings of a System that Insures
>   the Most Complete and Ac-
>   curate Printed in Any
>   Newspaper.
>   ——————
>
> ANOTHER TRIUMPH LAST WEEK.
>   ——————
>
> In the Herald Alone Was To Be Found
>   Correct Pluralities and the Vote Tab-
>   ulated by Election Districts.
>   ——————
>
> NO EXPENSE SPARED AND
>   AN ARMY OF EXPERTS.
>   ——————
>
> Such a Scene at the Compiling of the Vast
>   Mass of Figures and Such Intricate
>   but Smooth Working System as
>   Were Never Duplicated
>   or Attempted.   [136]
>   ——————

Themes that would come to define the shape of election-night broadcasting in the middle

of the 20th century could be seen at work here. The headline and story boasted of

innovation. Both called forth a sense of wonder at the integration of people, systems, and

technology in a fine-tuned process – one that required the coordination of a host of

players across a vast area in a compressed time frame. Collaboration with outside experts

was involved. So was "a vast amount of careful preparation."[137] And the writer

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[136] Ibid.

[137] Ibid.

addressed the reader directly, offering "to let you into the secret of the system" and then

asking at the end, "What do you think of it now that you have seen it from the inside?"[138]

The story left no doubt that immediate profit was not the supreme motive in all of

this. For one thing, the preparation and election-night operation could only be had with

"a heavy extra expenditure."[139] What the writer described as "the first and fundamental

secret" of the paper's system was this: "that the HERALD is willing to make that

expenditure."[140] For its troubles, the paper could measure its reward in "reputation."

Though the paper's election coverage could be counted on to generate orders for

"thousands of extra copies, both by advance orders and for weeks afterward," the writer

does not identify these orders as the prize, but rather as "the best proof" that "HERALD

election returns are synonymous with perfection in this field of journalistic endeavor."[141]

And this reputation was said to be not just "nation-wide," but "international": two years

earlier, the "Presidential Election HERALD of 1888," loaded with tables of voting data,

had created a "news sensation" in London.[142]

Newspaper reporters also wrote articles for magazines about the drama in the

newsroom on election night. One of the most extensive and detailed of these was penned

in November 1894 for *Scribner's Magazine* by Julian Ralph, a notable journalist and

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[138] Ibid.

[139] Ibid.

[140] In another account of the inside story of a newspaper on election night, the author writes this of the *New York Sun's* system of efficiently handling election returns in a way that speeds up the projection of winners: the preparation "probably requires several days' labor, but if you can 'beat' the other newspapers it is worth the great preparation that it costs." Alexander McD. Stoddart, "How the Newspapers Tell the Story of Election Day, *Outlook*, Nov. 8, 1916, 566ff.

[141] "How the Herald Gets Election Returns," *New York Herald*, Nov. 9, 1890, 16.

[142] Ibid.

author of his day.[143] His 14-page account clearly drew on his many years at the *New York Sun*, though the paper is not mentioned by name. He noted that while there was a great deal of "popular curiosity" about the work of journalists, accompanied by much mystery,

> … there is but one night in every year, in every great newspaper office, when work is done that is the least understood of all that goes on in the making of a daily paper; one night when the highest state of fever attends the excitement and strain of the most intense work that falls to the lot of any men, except soldiers at war. That is election night. That is the night when a few men sit down at six o'clock before virgin sheets of paper, with the knowledge that they must cover those sheets with the election figures of a nation, digesting mountains of figures and apprising the public of the results in the most condensed forms…. And these results must stand the test of comparison with the rival newspapers…[144]

Providing "windows into our methods," Ralph described in detail the systems by which the flood of returns was assembled, computed into totals, summarized for the stereopticon bulletins by a "bright reporter" selected especially for the task, expertly analyzed by knowledgeable reporters, and sent off to the composing room under strict deadlines imposed by the managing editor. There is a sense of wonder about some of those taking part. These range from the managing editor, who remains calm and focused amidst the chaos, to the well-paid, elegantly attired Washington correspondent in town for the occasion, who is known for having a smoke with the president on the back porch of the

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[143] Julian Ralph, "Election Night in a Newspaper Office," *Scribner's Magazine* XVI, no. 5 (November 1894), 531-544. Excerpts from the article appeared in *Outlook* magazine ("Election Night in a Newspaper Office, *Outlook* 50, no. 20 (Nov. 17, 1894), 829), and the article was reprinted as a richly illustrated chapter, "Election Night," in Julian Ralph's book, *The Making of a Journalist* (New York: Harper & Brothers, 1903), 145-173. Ralph (1853-1903) worked for 20 years for the *New York Sun*, but his career included periods writing for many other papers and magazines. Up to 1894 he had worked for several newspapers in New Jersey and Massachusetts, the *New York World*, the *Daily Graphic*, the *Sun*, and *Harper's*. He later worked overseas as a correspondent for the *New York Journal*, the *New York Herald*, the *Brooklyn Eagle*, the London *Daily Mail*, and *Harper's*. He also wrote a number of books. His career is described in Edd Applegate, *Literary Journalism: A Biographical Dictionary of Writers and Editors* (Westport, Conn.: Greenwood Press, 1996), 209-210.

[144] Ralph, "Election Night in a Newspaper Office," *Scribner's*, 531-532.

White House. While the first edition is being printed, there are a few minutes to take a break: "Hot coffee is brought up from a near-by restaurant, bottles of beer are being opened with a pop and a splash, grapes and sandwiches are being devoured by men who are all on their legs, relieving the strain of long sitting."[145] And then the heroic work resumes as the "chief men of the office" carefully scrutinize the competing papers – "wet and fresh" – and get on with the business of turning out a second edition. [146] The stakes on this night are of the highest: "journals which are managed with pride in their correctness" avoid being swayed by political bias in gathering and presenting the news, "take no chances" in assuring quality, and "throw economy to the dogs." [147]

In a magazine article in 1892 – "How the Returns Come In; Election Night in a Great Newspaper Office" – Willis John Abbot of the *Chicago Times* voiced another theme that would later be a hallmark of the election-night broadcasts of 1952.[148] With all the preparation, all the work to be done, all the forces to be marshaled, all the deadlines to be met, and all the pressure to turn out a timely and accurate report, the stress on a managing editor was extraordinary, with no guarantee of satisfaction when all was done. Abbot began his account on this very theme:

> When, on election morning, the managing editor lets himself into the cubby-hole of an office in which gentlemen of his profession are usually ensconced, he feels that the error of his career was made when he failed to resign the day before. He has to confront the problem incapable of exact solution, recurring every four years, yet to which the partial solutions of four years ago are applicable only in part to-day. Few people

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[145] Ibid., 544.

[146] Ibid.

[147] Ibid., 534.

[148] Willis John Abbot, "How the Returns Come In; Election Night in a Great Newspaper Office," *Christian Union* 46, no. 20 (Nov. 12, 1892), 876-877.

outside the profession of journalism have any comprehension of the amount of intelligent planning and painstaking study of detail involved in gathering and editing the election returns which are given to the public by every well-conducted paper the morning after each Presidential election.[149]

Abbot returned to the same theme at the end, after capturing the drama and wonder of highly-orchestrated election-night methodologies at work:

And after it is all done, when the wheat has been sifted from the chaff of tens of thousands of words of telegraph, when hundreds of columns of figures have been digested and put into a head-line, when at 6 a.m. the general result of an election in which twelve million votes were cast has been correctly announced, the managing editor will still feel that he has fallen short of fulfillment of his programme, and will believe more than half correct the scoff of the oldest printer in the "chapel," who invariably remarks at this season, "I've worked under every managing editor of this paper since old Nestor's time, and I never saw an election report so balled up like this 'ere one."[150]

This variation on the behind-the-scenes story presages some of the angst that those involved in the election-night broadcasts in 1952 would feel at the end of that night.

The Election-Night Audience: Part of the Story

In addition to the "story of the story" of how returns were gathered and analyzed, election coverage sometimes included florid accounts of the street scene.   The crowds around the newspaper displays grew increasingly massive and so became, themselves, an object of wonder. In 1860, the *New York Herald's* account of the scene in the vicinity of the newspaper on election night noted that the "living mass … presented such a spectacle that it must be witnessed to be fairly understood; and the sounds that arose therefrom

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[149] Ibid., 876.

[150] Ibid., 877.

more resembled the 'rumbling of distant thunder' than aught else we can think of at present."[151] In 1872, the *New York Times* account of the scene around its election-night display included this about the response to a mayoral contest: "Words cannot convey any idea of the frantic demonstration of approval."[152] A writer for the *New-York Daily Tribune* was carried away by emotion when describing, in no fewer than 82 lines of copy, the street scene on election night in 1896:

> Merely as a sublime spectacle New-York wore the aspect of a great force of nature last night. Poets have written of the sea in its might, and Milton has painted the gigantic splendors of hell.... New-York took on in its hour of triumph a grandeur that sent the mind to the two poles which mean the extremes of dramatic significance…
> How idle it must ever seem to any one who saw this spectacle to revert any longer to the Hanging Gardens of Babylon, to the Pyramids, to the highest Alps, to Rome, to any of the wonders of the world, for standards of grandeur… Perhaps we are, as individuals, a little amazed at what we all felt and did under the stress of excitement, aroused by the figures flashed upon screens all over the city… It was the work of a nation… To have seen the spectacle of the Election Night of 1896 is to have had the veil of mortality swept aside for the nonce, and to have had a glimpse of the glorious attributes of immortality. The vision can never die.[153]

Newspapers were not the only cultural players to remark on the awesome nature of collective activity in the service of democracy as a feature of elections. Consider these lines from Walt Whitman's poem, "Election Day, November 1884":

> If I should need to name, O Western World,
>   your powerfullest scene and show,
> 'Twould not be you, Niagara – nor you, ye
>   limitless prairies – nor your huge rifts of canyons, Colorado,
> Nor you, Yosemite – nor Yellowstone, with all its spasmic
>   geyser-loops ascending to the skies, appearing and
>   disappearing,

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[151] "The Finale; The Scene Around The Herald Office," *New York Herald*, Nov. 7, 1860, 3.

[152] "Receiving the News," *New York Times*, Nov. 6, 1872, 8.

[153] "The Spectacle," *New-York Daily Tribune*, Nov. 4, 1896, 4.

Nor Oregon's white cones – nor Huron's belt of mighty
    lakes – nor Mississippi's stream:
– This seething hemisphere's humanity, as now, I'd name –
    the still small voice vibrating – America's choosing day,
(The heart of it not the chosen – the act itself the main….)[154]

Nineteenth century journalists can be seen positioning themselves in the center of this activity, key players on election night in drawing the democratic mass together. During the Civil War, the *New York Herald's* post-election story in 1864 left no doubt about the paper's place in the saga of election night: "A similar scene cannot perhaps be witnessed in any other country than democratic America, nor in any other city of the Union than New York, and nowhere else in the metropolis than around the Herald office."[155] Four years later, an even more theatrical account reported that "The sun had scarcely set – long, indeed, ere the dusk had spread its gloomy wings – the multitude, as if by instinct, moved *en masse* towards the Herald building…. The Herald was the magnet of the moving population of the city last night."[156] And once there, the "multitude" could behold a technological wonder akin in likeness to a "new moon," bulletins projected by "brilliant calcium light" that "shed its rays upon the transparency." Three days after the voting in the disputed 1876 presidential contest between Rutherford B. Hayes and Samuel Tilden, the *New York Times* reported "few signs of decrease," despite rain, in the "surging mobs of eager citizens clustered in front of the bulletin-boards" on which newspapers were posting fresh dispatches from the states with uncertain results.[157] In

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[154] Walt Whitman, "Election Day, November, 1884," in *Walt Whitman: The Complete Poems* (London: Penguin Books, 2004).

[155] "Scenes Around The Herald Office," *New York Herald*, Nov. 9, 1864, 8.

[156] "The Herald Building," *New York Herald*, Nov. 4, 1868, 10.

[157] "Election Excitement," *New York Times*, Nov. 11, 1876, 8.

1897, the *New York Times* reported that while the city's newspaper district, Park Row, in its "long, varied, and exciting history has seen many crowded and crazy nights," there was "never one crazier or more crowded than last night."[158] Newspapers eventually used photography to provide evidence of the magnitude of the crowds drawn to newspaper displays on election night. One such photograph accompanied the *St. Louis Post-Dispatch* coverage in 1920. It is the width of a newspaper page and shows a virtual sea of formally attired men and women, their upturned faces captured in a "flashlight" photograph as they watch the newspaper's display from the street. Even from the distance of more than 80 years, the scene is striking, and the *Post-Dispatch* did not miss the opportunity to share it with its readers under a headline that read: "Immense Throngs in Twelfth Street and Auditoriums Get Post-Dispatch Election Bulletins." [159]

Over the course of several generations, through changes in newspapers' reporting styles, readership, and the technologies and systems used to gather and disseminate the news, there had developed several powerful line of continuity in the culture of election-night journalism. These would continue into the era of broadcast news.

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[158] "In Front of the Bulletins," *New York Times*, Nov. 3, 1897, 5.

[159] "Immense Throngs In 12th Street and Auditoriums Get Post-Dispatch Election Bulletins," *St. Louis Post-Dispatch*, Nov. 3, 1920, 29.

Chapter 3: Election Night in the Era of Broadcasting

From the earliest days of radio – starting with the experimental period before it was a popular medium – election night continued to provide a venue for showcasing new technology. A sense of wonder at contemplating the audience for real-time election bulletins – now spread over previously unimaginable distances – also continued to be a salient feature of the "story of the story." So did new technology's capacity to play a critical role in both collaboration and fierce competition within the world of journalism on election night.

The precursor to radio arrived in the United States as part of a promotion advancing the intersecting interests of an inventor known for his promotional savvy and a newspaper publisher known for his competitive zeal. Guglielmo Marconi's experimentation in Italy and Great Britain with the wireless transmission of telegraphic code led to a British patent in 1897. A sensational demonstration in the United States followed in the fall of 1899. At the invitation of James Gordon Bennett and with a great deal of fanfare, Marconi used his invention to cover the America's Cup races for Bennett's *New York Herald.* Dispatches with accounts of the action were conveyed to waiting crowds in New York, forwarded by wire around the country, and transmitted by cable across the Atlantic. It was a coup for both the inventor and his journalistic patron.[1] Earlier the same year, Lee de Forest had completed his doctoral dissertation at Yale, where he experimented with the electromagnetic waves that made wireless telegraphy

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[1] Accounts of Marconi's inventions, career, and exploits can be found in Erik Barnouw, *A Tower in Babel: A History of Broadcasting in the United States, Volume 1 – to 1933* (New York: Oxford University Press); Susan J. Douglas, *Inventing American Broadcasting, 1899-1922* (Baltimore: The Johns Hopkins University Press, 1987); Hugh G. J. Aitken, *Syntony and Spark – The Origins of Radio* (New York: John Wiley & Sons, 1976); Hugh G. J. Aitken, *The Continuous Wave: Technology and American Radio, 1900-1932* (Princeton: Princeton University Press, 1985).

possible – and then wrote to Marconi in a bid to become Marconi's assistant.[2] De Forest did not land the position, but he was soon among the pioneers competing with Marconi and experimenting with devices for the wireless transmission of sound – known by terms such as "wireless telephone," "radiotelephone," or "radiophone" before it was more commonly known, simply, as "radio."[3] De Forest would also see the promotional benefits of yoking wireless telephone together with a news event of great public interest – the reporting of election returns.

Though not a great businessman, de Forest demonstrated repeatedly that he appreciated the linkage between new technology, showmanship, and publicity.[4] Early experiments that helped win him notoriety included broadcasting music hundreds of miles by wireless telephone from atop the Eiffel Tower in 1908.[5] Two years later, he arranged one of the more notable early broadcasts of the human voice: the legendary tenor Enrico Caruso performing at New York's Metropolitan Opera House. Caruso could be heard by listeners who had been invited to gather at points in New York City and Newark, New Jersey, including a group of "newspaper men" whose response was quite

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[2] Donald G. Godfrey and Frederic A. Leigh, eds., *Historical Dictionary of American Radio* (Westport, Conn: The Greenwood Press, 1998), 116-117; James A. Hijiya, *Lee de Forest and the Fatherhood of Radio* (Bethlehem, Pa.: Lehigh University Press, 1992), 58; Aitken, *The Continuous Wave,* 162-168.

[3] These terms are used interchangeably in news accounts of the time. Susan Douglas notes that between 1906 and 1920, "radio" was also used interchangeably with "wireless telegraphy" (that is, the wireless transmission of telegraphic code), but by 1920, "radio broadcasting" was understood to be the wireless transmission of sound – voice and music; Douglas, *Inventing American Broadcasting,* xxvii-xxix.

[4] De Forest's difficulties in business included failed ventures and episodes of being victimized by partners; see Godfrey and Leigh, *Historical Dictionary of American Radio,* 116-117. In addition to some of the examples provided here of de Forest's consciousness of the value of the press and publicity, he attempted to compete with Marconi after 1899 in reporting on international yacht races in association with the Publishers' Press Association, an episode that didn't work out well for either inventor as their equipment interfered with each other's transmissions; see Aitken, *The Continuous Wave*, 184-185, 187.

[5] Michael Emery, Edwin Emery, and Nancy L. Roberts, *The Press and America: An Interpretive History of the Mass Media*, 9th ed. (Boston: Allyn and Bacon, 2000), 269.

laudatory.[6] In the fall of 1916, de Forest was engaged in yet another round of activities to

call attention to his ideas about the future of wireless telephone – and to generate

business, including sales of listening equipment and of the Audion tubes he had invented

for amplifying weak radio signals.[7] In late October, he generated news by arranging the

broadcast of phonograph music from the Columbia Graphophone Company's laboratory

in Manhattan to an audience assembled a few blocks away at the Hotel Astor in Times

Square.[8] Several weeks later, in the middle of November, he would be the subject of

wide-eyed newspaper stories about his novel plan to make the wireless telephone a

medium for news.[9] One such story referred to the concept in a four-deck headline as "An

Air Paper," a "Scheme to use Atmosphere as Medium for Sending News," and "A

Wireless Journal," adding: "De Forest Company To Start First Publication in America."[10]

Just ahead of these stories about the advent of a new medium for news, election night

turned out to be a prime opportunity to launch this innovative application of radio

technology.

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[6] Georgette Carneal, *A Conqueror of Space: An Authorized Biography of The Life and Work of Lee De Forest* (New York: Horace Liveright, 1930), pp, 231-232; Barouw, *A Tower in Babel*, 27; "Lee De Forest: A Register of His Papers in the Library of Congress," finding aid, Lee de Forest Papers, Manuscript Division, Library of Congress, Washington, D.C., http://lcweb2.loc.gov/service/mss/eadxmlmss/eadpdfmss/1998/ms998006.pdf.

[7] Lee de Forest mentioned this business motive in his autobiography, *Father of Radio* (Chicago: Wilcox & Follett Co., 1950), 337.

[8] "Music Sent by Wireless," *New York Times*, Oct. 27, 1916, 7. An account was also disseminated by the International News Service. An INS story, "Music by Wireless, De Forest Plan," that appeared in the *New Castle News* (New Castle, Pa., Nov. 2, 1916, 7) reported that de Forest had given an exhibition of "the wonders of wireless music" and that he was making plans to erect a transmitter that could broadcast concerts for hundreds of miles.

[9] See, for example: "Wireless Newspaper Has 1,000 Subscribers," *Tyrone (Pa.) Daily Herald*, Nov. 14, 1916, 5; articles with the same headline appeared in other papers, including: *Warren (Pa.) Evening Mirror*, Nov. 18, 1916, 9; *Richwood (Ohio) Gazette*, Nov. 23, 1916, 8; *Wellsboro (Pa.) Gazette*, Nov. 16, 1923, 3; *Middletown (N.Y.) Times-Press*, Nov. 16, 1916, 7.

[10] "An Air Paper," *Kingston (Jamaica) Gleaner*, Nov. 14, 1916, 4.

As with earlier uses of election night to showcase technology, de Forest's exploits on Nov. 7, 1916, represented a close collaboration between journalists and technologists and took place at the intersection of news and entertainment. In his autobiography, de Forest recalled that on this occasion – with which he staked a claim as "the first use of radiotelephone for broadcasting news of general interest" – his laboratory station transmitted election news provided by William Randolph Hearst's *New York American*.[11] The broadcast lasted six hours. The vote counts arrived by telephone from the newspaper building to the de Forest facility in the Highbridge neighborhood of the Bronx, across the Harlem River from Manhattan.[12] From there, accounts variously identify the inventor and "an unassuming chap" named Walter Schare as providing bulletins over the air.[13] In between bits of election news, listeners were regaled with "music sent through the clouds," in the words of the *American*. The tunes included "The Star Spangled Banner," "Dixie," "Columbia, the Gem of the Ocean," "America," "Maryland," "Yankee

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[11] De Forest, *Father of Radio*, 338-339 (De Forest does not mention Hearst by name in this account). The episode is also described in: Carneal, *A Conqueror of Space*, 272-273; "Election Returns Flashed by Radio to 7,000 Amateurs," *The Electrical Experimenter* IV, Whole No. 45, No. 9 (January 1917), 650; and in two articles in the *New York American* on the days following the election: "American's Returns Sent 200 Miles by Wireless Telephone," *New York American*, Nov. 8, 1916, 5; and "American's Bulletins Win Praise," *New York American*, Nov. 9, 1916, 4. Hearst changed the name of his morning paper, the *New York Journal*, to the *New York American* after President McKinley was assassinated in 1901 by an anarchist who was carrying a copy of the *Journal*, a paper that had been critical of McKinley; Emery et al, *The Press and America,* 216.

[12] A story the day after the election makes clear that the results were transmitted to de Forest's facility by telephone: "American's Returns Sent 200 Miles by Wireless Telephone," *New York American*, Nov. 8, 1916, 5.

[13] Schare is mentioned in a *New York American* article the day after the election (which also spells his name in a second reference as "Share") and in an article that appeared later in a magazine article, much of which appears to have come from the *American* account: "American's Returns Sent 200 Miles by Wireless Telephone," *New York American*, Nov. 8, 1916, 5 ; and "Election Returns Flashed by Radio to 7,000 Amateurs," *Electrical Experimenter*, 650. Schare is described at one point as a salesman of de Forest equipment: James Schwoch, *The American Radio Industry and Its Latin American Activities, 1900-1939* (Urbana, Ill.: University of Illinois Press, 1990), footnote 55, 5. In his autobiography, de Forest provides only a brief account of election night 1916. He does not go into details about who handled the broadcast beyond saying that "we" sent out bulletins and that he was the "chief announcer"; de Forest, *Father of Radio*, 338.

Doodle," and, reported the *American*, "all the other anthems, songs and hymns that Americans love." Contemporary accounts carried estimates that thousands of amateur wireless receivers within 200 miles of Highbridge could hear the de Forest broadcast.[14] Years later, de Forest would recall that at 11 p.m., just before he shut down the station for the night, he announced the election not of the incumbent, Woodrow Wilson, but of the Republican challenger, Supreme Court Justice Charles Evans Hughes. De Forest was in good company with his errant call. Shortly before 9 p.m. on election night, the *New York Times* signaled by prearranged code – rings of red light atop the Times Tower and a swinging red searchlight – that Hughes was the apparent victor.[15] The *New York Herald* was even earlier to give the nod to Hughes. Under a flash photo of an immense crowd packed shoulder to shoulder in Herald Square, the newspaper boasted that at precisely 7:31 p.m. it had simultaneously pronounced Hughes the winner from its own searchlight atop the Metropolitan Tower – said to be visible for 25 miles – and in bulletins projected on 11 outdoor screens in Manhattan, Brooklyn, the Bronx, Yonkers, and Newark.[16] The

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[14] One contemporary publication put the number at 7,000: "Election Returns Flashed by Radio to 7,000 Amateurs," *The Electrical Experimenter*, 650. The *New York American* estimated de Forest's potential audience as 8,000 amateur wireless operators "with apparatus attuned to the instruments of the De Forest Radio Telephone & Telegraph station at Highbridge": "American's Bulletins Win Praise," *New York American*, Nov. 9, 1916, 4. In a brief item mentioning de Forest in the *New York Times* that emphasizes Bronx as the location of the broadcast, there is a second paragraph that begins "Some 200,000 persons, many of them minors, heard the returns in the main thoroughfares of Bronx County." The item goes on to talk about the "temper" of the crowd, and it is not clear whether this reference to 200,000 persons is meant to suggest that they heard the returns from de Forest, or they got the news in some other way. No other reference to crowds getting the de Forest returns in the street appears in any of the sources consulted for this study, including contemporary accounts, de Forest's autobiography, or biographies by Hijiya, *Lee de Forest and the Fatherhood of Radio*, or Carneal, *A Conqueror of Space.*

[15] "100,000 Get Returns At Times Building; News of Hughes's Apparent Victory Is Greeted by Outburst of Cheers from Throng," *New York Times*, Nov. 8, 1916, 4; the prearranged codes appeared in "Election Results to be Signaled from Times Tower," *New York Times*, Nov. 7, 1916, 1.

[16] "Herald Bulletins Flash News to Thousands," *The New York Herald*, Nov. 8, 1916, 14; "Herald Signals Hughes' Election by Searchlight; White Horizontal Beam Cast Over radius of Twenty-Five Miles from Tower," *New York Herald*, Nov. 8, 1916, 14.

American, too, was among the papers putting out morning editions assigning victory to Hughes, giving him electoral votes from a number of Western states that would eventually go to Wilson once the tally was completed during the two days after the election.[17]

The quality of the reporting notwithstanding, the larger historical importance of the de Forest broadcast was not lost on either the inventor or the journalists with whom he collaborated, and each framed it in a way that highlighted the fact of their separate but intersecting interests. For example, two days after the election, the *American* ran a news story featuring a letter from de Forest to the paper's editor.[18] From de Forest's

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[17] For examples of newspapers reporting Hughes as the winner, see "Nation Swept by Hughes; New York Elects Whitman," *New York American*, Nov. 8, 1916, 1; "Mr. Hughes is Elected With Majority of Forty Votes in the Electoral College; Mr. Whitman Wins; House of Representatives Will be Republican," *New York Herald*, Nov. 8, 1916, 1. The *Washington Post* called the election for Hughes on election night and reported that papers from the *New York World* to the *Portland Journal* in Oregon did the same: "Record Election Night; 100,000 in Streets See Bulletins Flash Hughes' Election," *Washington Post*, Nov. 8, 1916, 3. The *Times* reported that the subsequent uncertainty provided an occasion for a "second 'election night,' " replete with newspaper bulletins, "long hours of suspense," boisterous street scenes, and restaurants with "capacity crowds": "Election Thrills Held Big Crowds; Broadway features Wilson and Hughes for the Second Night," *New York Times*, Nov. 9, 1916, 4. A check of the newspapers available for searching online at NewspaperArchive.com yields additional instances of morning newspapers calling the election for Hughes. For example: "Hughes Our Next President," *Oneonta (N.Y.) Daily Star*, Nov. 8, 1916, 1. An evening paper, the *Decatur (Ill.) Daily Review*, described the phenomenon the next day in an article headlined "Change in Night; Remarkable Swing in Returns From Hughes to Wilson—None Like It since 1892" (Nov. 8, 1916, 9): "When the Republican landslide in New York became known and was quickly followed by the heavy Republican victories in New England, there was a veritable stampede to announce the election of Mr. Hughes.... Hundreds of thousands waiting in the street saw the signal lights flash the defeat of the president. New York newspapers, which have been prominent in their support of him, conceded the president's defeat before some of the western states had been heard from. Thousands of persons in the east went to bed believing Mr. Hughes elected and woke up this morning to find the result apparently changed, while they slept." The *New York Herald* reported the next day ("Daughters Awaken Mr. Hughes to Tell Him of Election," Nov. 8, 1916, 12) that Hughes and his family could see the bulletins declaring him the winner from his apartment at the Astor.

A notable exception to the next-day papers giving victory to Hughes was the *Boston Globe,* still under the command of Charles Taylor, with his methodical approach, his "distrust of guessing," and his "caution against taking anything for granted on an election night": Morgan, *Charles H. Taylor,* 125-126; see also Lyons, *Newspaper Story,* 196-200. Littlewood also gives an account of newspaper coverage of the 1916 returns in a number of cities in *Calling Elections*, 95-99; anecdotes include the use of an aviator to fly over St. Paul, Minnesota, with color-coded lights to signal the outcome of the election.

[18] "American's Bulletins Win Praise," *New York American*, Nov. 9, 1916, 4.

perspective, the journalists were cooperating parties in his own grand and futuristic

vision, a whole new concept in transmitting news:

> "I wish to thank you most heartily for the active co-operation of the Hearst newspapers in our efforts to publish the first 'Wireless Telephone Newspaper.'
> "In sending out New York American election returns from my laboratory station here last night, combined with a music concert, we demonstrated what I believe, in time, will mark a very significant epoch in the distribution of news.
> "We have been literally overwhelmed by telephonic and mail replies from various wireless listeners, who have been intensely interested in the news we sent out, with many requests that we make this news and music service a regular feature. This we propose to do.
> "I believe you will recognize the fact that the time will come when from large wireless telephone stations scattered throughout the country literally hundreds of thousands of listeners, provided with a simple receiver, will be able to get the latest news, combined with music and entertainment, in their homes.
> "This will mean much to those in rural districts, who are out of touch with the late evening editions of the newspapers.
> "I trust you will express my thanks to all of your staff, who have so ably co-operated in making this effort a success."[19]

As for the *American*, in stories on each of the two days following the election, the

newspaper positioned itself at center stage in the saga of the election-night broadcast.[20]

For starters, this was just one in an elaborate set of arrangements whereby, the paper

claimed, "more than a million persons received their first news of the returns through The

American service."[21] The *American* reported that its returns were made available in 180

or more locations around greater New York – flashed on screens at nearly 100

"cinematograph," or motion picture, theaters; read from the stage at dozens of shows,

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[19] Ibid.

[20] "American's Returns Sent 200 Miles by Wireless Telephone," *New York American*, Nov. 8, 1916, 5; and "American's Bulletins Win Praise," *New York American*, Nov. 9, 1916, 4.

[21] "American's Bulletins Win Praise," *New York American*, Nov. 9, 1916, 4.

including Ziegfeld's Follies; displayed in famed hotels, including the Waldorf-Astoria, the Plaza, and the Ritz-Carlton; announced to diners at "fashionable" restaurants; and projected on outdoor screens at several locations in Manhattan, Brooklyn and the Bronx, along with movies to keep the crowds entertained.[22] The *American* also employed another innovation at the intersection of journalism and technology, one it had reported inaugurating a few days before the election and was calling "The Newspaper in the Sky."[23] An electric sign some 64 feet long and 20 feet high that could flash news bulletins in letters four feet tall – "the very newest thing in electric signs" – had been erected atop a 25-story building at 49th St. and Seventh Ave.[24] A similar "frame of fire" was erected in Newark, N.J., and carried the *American's* election bulletins.[25]

Attention to this array of means for transmitting election-night news was not to diminish the significance of what de Forest had done. In its first story on all these arrangements on the day after the election, the newspaper carried a bold headline calling attention to the wireless broadcast as historic – and framing it as a *New York American* operation: "American's Returns Sent 200 Miles by Wireless Telephone; This Newspaper First to Use New De Forest Method for This Purpose."[26] Written with dramatic flourish,

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[22] "American's Returns Sent 200 Miles by Wireless Telephone," *New York American*, Nov. 8, 1916, 5; and "American's Bulletins Win Praise," *New York American*, Nov. 9, 1916, 4. In addition to the post-election stories, detailed accounts of the locations and means for getting election news were published in the paper ahead of time. See "Election Returns of the New York American; Where They Will Be Displayed on Election Night," *New York American*, Nov. 5, 1916, Part II, 1; and "Election Returns of the New York American; Where They Will Be Displayed on Election Night," *New York American*, Nov. 6, 1916, 9.

[23] "Newspaper in Sky Flashes Bulletins to Crowds To-night; New York American to Give World's News from Marvellous [*sic*] Electrical Signs," *New York American*, Nov. 1, 1916, 5.

[24] Ibid.

[25] "American's Returns Sent 200 Miles by Wireless Telephone," *New York American*, Nov. 8, 1916, 5.

[26] Ibid.

the story described the way the newspaper staff had "worked like dynamos" to generate

election bulletins, and gave this description of the broadcast:

> Thus, through the clouds, was hurled the news of the night. To tossing ships beyond the bay, beyond the end of Long Island, across the northern tier of New Jersey, far up the rolling Hudson, leaping far above the rugged palisades, topping the crests of the Catskill foothills and charging above the glowing towns and villages, farms and valleys swept the news.
> It was the first time in the history of this wonderful world of ours that such a thing could be done. For the first time the wireless telephone had been demonstrated as a practical, serviceable carrier of election news and comment.[27]

The article concluded by reminding readers one more time of the paper's heroic election-

night labors: "It was a stupendous effort, but the thousands of messages of thanks

received amply paid for the weary strain and the night-long grind."[28]

At least two other New York papers weighed in on the historic nature of the de

Forest broadcast, though each in a self-serving way. In a two-sentence account, the *New

York Times* deemed it "an election-night innovation" – without mentioning that de Forest

got his election-night information from a *Times* competitor.[29] In a brief mention of de

Forest, the *New York Herald* reported – against the backdrop of its own efforts to spread

the news a great distance by "wireless" (perhaps in telegraphic code, though the type of

wireless is not specified) – that election night was "the first time the wireless telephone

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[27] Ibid.

[28] Ibid.

[29] "Returns by Wireless; De Forest Radio Laboratories Flashed Bulletins at Highbridge," *New York Times*, Nov. 8, 1916, 6.

had been put to a practical use."[30] The *Herald* also took credit as the source of the

bulletins that de Forest transmitted, with no mention of the *American*.[31]

The technologist, de Forest, had seized on election night as a prime opportunity to

advance his interests. What is equally clear is that an association with this innovative

technology was perceived as having the capacity to bestow status on any journalists

involved. Hence the *American's* lavish attention to its role, the *Times's* omission of the

fact that de Forest had carried out his feat in alliance with at least one rival paper, and the

Herald's focus on itself and silence about the *American.*

Election Night as a Venue for Launching Commercial Radio

After the United States entered World War I in 1917, President Wilson exercised

his legal authority to commandeer wireless stations or shut them down. Some 53

commercial wireless stations were placed under the control of the Navy, and the other 28

were taken off the air.[32] But with the end of the war, promoters – including newspaper

publishers and entrepreneurs with an interest in selling radio equipment – began to see

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[30] "Herald Spreads Election News by Wireless," *New York Herald*, Nov. 8, 1916, 11.

[31] The *Herald* account is ambiguous in several ways worth noting here. The story is mostly about wireless transmissions on election night from the *Herald's* own station in the Battery, where the paper maintained a ship news office, and where, on election night, it transmitted bulletins to amateur enthusiasts, ships at sea, and receiving stations as far away as the Great Lakes and the U.S. Navy base at Guantanamo Bay in Cuba. These transmissions would seem to be by wireless telegraph, not wireless telephone, based on the context. This includes the fact that "wireless telephone" appears in the story in only one place, where it is singled out for special mention – a two-sentence passage dealing with De Forest. The second of these two sentences is garbled, as printed, and does not make clear to readers whether it is the De Forest station that was sending – or receiving from the *Herald* – election news by wireless telephone. That paragraph, which also misspells the inventor's name, reads as follows: "The De Forrest wireless at High Bridge posted Herald bulletins while entertaining other wireless stations in the vicinity with national airs played on the wireless telephone in the intervals. In addition to the regular wireless bulletins the De Forest received from the Herald also bulletins by wireless telephone – the first time the wireless telephone had been put to a practical use."

[32] Douglas, *Inventing American Broadcasting,* 276ff.

opportunities in the commercial broadcasting of voice and music. The question of who was "first" to do one thing or another in the early history of radio has been a contentious one.[33] But what is clear is that for nascent broadcasting concerns looking to launch with a splash, the public appetite for election news represented an ideal target – and one worth scrambling to meet. In time for the 1920 campaign season, primaries and election night would be seen as ideal opportunities to roll out innovative applications of the new technology.

One of these took place in Detroit, where William E. Scripps, publisher of the *Detroit News*, had become intrigued by radio at a time when the notion that radio might have a future as a news medium was still an exotic concept. After assembling a radio receiver at home from parts and being able to hear voice transmissions over the airwaves, he bought a piece of de Forest equipment, a "radiophone" transmitter, and arranged to have it installed and tested at the newspaper.[34] The amateur station was licensed as "8MK," and there is some evidence that it represented a collaboration between the newspaper publisher and a group of de Forest associates looking to sell radio

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[33] See, for example, the discussion by Christopher H. Sterling and John M. Kittross, *Stay Tuned: A History of American Broadcasting*, 3rd ed. (Mahwah, N.J.: Lawrence Erlbaum Associates, 2002), 63-67; Aitken, *The Continuous Wave,* 469ff; Gordon B. Greb and Mike Adams, *Charles Herrold, Inventor of Radio Broadcasting* (Jefferson, N.C.: McFarland & Company, 2003), 150ff; and Gleason L. Archer, *History of Radio to 1926* (New York: The American Historical Society, 1938), 207ff.

[34] This account is drawn from Barnouw, *A Tower in Babel*, 62-64; Sterling and Kittross, *Stay Tuned*, 66; Emery et al., *The Press and America,* 272; The Radio Staff of The Detroit News, *WWJ-The Detroit News: The History of Radiophone Broadcasting by the Earliest and Foremost of Newspaper Stations; Together With Information on Radio for Amateur and Expert* (Detroit: The Evening News Association, 1922), 7-9; Gleason L. Archer, *History of Radio to 1926* (New York: The American Historical Society, 1938), 208; and the following articles in *The Detroit News*: "The News Radiophone To Give Vote Results," Aug. 31, 1920, 1; "Radio Operators! Attention!" Aug. 31, 1; "Land and Water Hear Returns by Wireless," Sept. 1, 1920, 1; "Operators of Telephone and Wireless Sets!" Sept. 1, 1920, 1; "Wireless Stations Praise News Radiophone Service," Sept. 2, 1920, 1, 21; "Voice by Radio Clearly Heard by Night Listeners," Sept. 3, 1920, 1-2.

equipment.[35] A period of testing ended with a front-page announcement on August 31,

the day of the Michigan primary. While all other stories across the top of the front page

rated only one-column headlines – from news of early voting in Detroit to the declaration

of martial law in Belfast – the newspaper reserved for itself a larger, two-column

headline: "The News Radiophone to Give Vote Results."[36] Amateurs were urged to give

wireless parties so they could hear "voices in the night." The event would be "epochal,"

the *News* declared, and there was speculation that "a hundred years from now, perhaps,

all news will be transmitted by wireless telephone: who knows?"

On the day after the election, the biggest display across the top of the *Detroit*

News front page was not the outcome of the primary but the newspaper's successful

broadcast of election returns.[37] The story, which also announced the launch of a regular

nightly service offering news and music, was nothing less than euphoric. The newspaper

claimed for itself a place in the intersecting histories of journalism and technology – and

framed the event as the culmination of human imagination. It began this way:

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[35] The most commonly cited accounts of 8MK's election broadcasts, along with de Forest's autobiography and *Detroit News* accounts of those broadcasts, do not provide a consistent or clear picture on this point. Sterling and Kittross write of 8MK that "The Radio News and Music Company, formed by associates of de Forest to sell his radio equipment, held the license" and that "the *News*, a Scripps paper, apparently financed the broadcasts…" (*Stay Tuned*, 3rd ed., 66). In his autobiography, de Forest writes "In the spring of 1929, my old Army buddy and stanch friend, C.S. Thompson, together with John Hubbard, organized the Radio News and Music Company and began making systematic efforts to sell our radiophone transmitters to various newspapers…. Thompson finally succeeded in interesting William E. Scripps, owner of the *Detroit Daily News*. He quickly became convinced that the *Detroit News* must be the first newspaper in the country to have a radio broadcasting transmitter, a De Forest Type OT-10" (*Father of Radio*, 356). Gleason L. Archer, in his landmark 1936 history of the early years of radio, mentions the *Detroit News* and 8MK in only one place, according to the index. That is a discussion on pp. 207-208 in *History of Radio to 1926* (New York: The American Historical Society) of competing claims between the pioneering Detroit and Pittsburgh stations for "priority" status. Archer reports a third-hand account that in a 1921 Department of Commerce publication listing amateur radio stations, the Radio News and Music Company, Inc., of Detroit is "listed as the operator of Station 8MK" and that a connection to the Detroit News in that official record "is not evident."

[36] "The News Radiophone To Give Vote Results," *Detroit News*, Aug. 31, 1920, 1.

[37] "Land and Water Hear Returns," *Detroit News*, Sept. 1, 1920, 1.

135

> One by one the novelists and poets of the ages have watched their dreams come true. Cold, hard, practical science seems always to follow the dream trail through the primeval forests of man's desires, broken first by the dwellers in fiction-land, bringing up in the rear with the paving stone with which to lay the broad highway to the ultimate conquest of all nature.[38]

The "sending of the election returns by The Detroit News' radiophone," the newspaper boasted, "was fraught with romance and must go down in the history of man's conquest of the elements as a gigantic step in his progress."[39] Following such prescient purveyors of futuristic visions as Jules Verne and H.G. Wells, here was the *Detroit News* with the embodiment of "a dream and a prediction," whereby "the news of the world was being given forth through this invisible trumpet to the unseen crowds in the unseen market place."[40] In reality, the crowds were not so large – by the newspaper's estimates, measured in the hundreds. But in an event that helps mark the beginning of radio journalism, election night provided an opportunity to make the case, and more than two dozen individual testimonials about reception of the news and music service were published in the days following the election.[41]

The fall elections in 1920 featured a battle for the presidency between two Ohio newspaper publishers – Republican Sen. Warren G. Harding, publisher of the *Marion Daily Star*, and Democratic Gov. James M. Cox, publisher of the *Dayton Daily News.* The Detroit station, 8MK, broadcast returns again on election night. And in one of the

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[38] Ibid.

[39] Ibid.

[40] Ibid.

[41] "Land and Water Hear Returns by Wireless," *Detroit News*, Sept. 1, 1920, 1; "Wireless Stations Praise News Radiophone Service," *Detroit News*, Sept. 2, 1920, 1, 21; "Voice by Radio Clearly Heard by Night Listeners," *Detroit News*, Sept. 3, 1920, 1-2.

most iconic events in the early history of broadcasting, so did station KDKA in East

Pittsburgh, helping to launch the era of commercial radio.[42]

The outlines of the KDKA story are frequently recounted in histories of

broadcasting.[43] It is typically seen as a pioneering and revolutionary event in the context

of radio's transition from a curiosity to something commonplace and essential. But with

the choice of election night as a debut, the KDKA episode is also part of a story of

cultural continuity: the reporting of election-night news as an important showcase for

new technology.

After the end of World War I, a Pittsburgh-area engineer named Frank Conrad,

who had spent several years working on military wireless projects at the Westinghouse

Electric and Manufacturing Company, received permission to return to the air as a

hobbyist, operating amateur radio station 8XK from his garage. At the time, the wireless

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[42] In fact, Aitken argues that what was novel in 1920 about KDKA and its amateur predecessor, 8XK, was not the technology involved but the way it was employed, including a combination of regularly scheduled broadcasts and commercial backing; see Aitken, *Continuous Wave*, 471ff.

[43] While the KDKA story is often recounted, the details tend to vary slightly both in the secondary source material and in the published recollections of the participants, including differences in the chronology of events and the relative importance of the parties involved. The account here includes common elements of these accounts, with specific footnotes for some items not found in the majority of accounts. The secondary sources consulted here, including some with extensive quotations of primary-source material, include: Archer, *History of Radio to 1926*; Barnouw, *A Tower in Babel;* Aitken, *Continuous Wave;* Emery et al., *The Press and America*; Douglas, *Inventing American Broadcasting, 1899-1922*; Alfred Balk, *The Rise of Radio, from Marconi through the Golden Age* (Jefferson, N.C.: McFarland & Company, 2006); Greb and Adams, *Charles Herrold, Inventor of Radio Broadcasting;* Marwan A. Simaan, "An Introduction to D.G. Little's 1924 Classic Paper 'KDKA,' " in *Proceedings of the IEEE* 86, no. 6 (June 1998), 1273-1278; Sterling and Kittross, *Stay Tuned*, 65-66; and KDKA NewsRadio, "It All Started in Pittsburgh…" http://www.kdkaradio.com/pages/15486.php. The first-person accounts consulted include: H. [Harry] P. Davis, "The Early History of Broadcasting in the United States," an address to the Graduate School of Business Administration, Harvard University, published in *The Radio Industry: The Story of its Development* (Chicago: A. W. Shaw Company, 1928), 189-225; S. M. Kintner, "Pittsburgh's Contribution to Radio," *Proceedings of the Institute of Radio Engineers* 20, no. 12 (December 1932), 1849-1862; and Donald G. Little, "The Reminiscences of Donald G. Little," Columbia University Oral History Collection on Microfiche, Part V (New York: Columbia University Oral History Research Office, Radio Unit, 1984). Excerpts from Little's oral history also appear in Donald G. Little, "Dr. Conrad founds KDKA," pp. 71-73, in "The Early Days of Radio; An unpublished story from the files of the Oral History Project," *American Heritage* 6, no. 5 (August 1955), 66-88.

telegraph was still much more common than the wireless telephone, and Conrad's

transmissions of music from phonograph records began to attract attention. Other

amateurs contacted Conrad to request particular songs. Journalists took notice, too, and

not just in Pittsburgh. A brief item in the *New York Times* at the end of 1919 reported

that listening to Conrad's broadcasts had become the "Saturday evening amusement of

400 owners of wireless receiving sets living in Pittsburgh and its environs."[44] After a

local department store ran at least one newspaper ad calling attention to Conrad's

"wireless concerts" – and to the fact that those concerts could be heard with receiving

sets for sale at the store – Conrad's boss at Westinghouse, Vice President Harry P. Davis,

became intrigued. [45] In a speech a few years later to the students of the Graduate School

of Business Administration at Harvard University, Davis recalled having something of a

conversion when he thought about Conrad's amateur broadcasts, the potential audience,

and the local merchant's efforts to cash in.[46] Davis was coming to understand that radio

telephony, which tended at the time to be seen primarily as a means of point-to-point

communication, could become a mass medium, with one station broadcasting to many

listeners. Davis set in motion plans for Westinghouse to create a station at its facility in

East Pittsburgh and to sponsor nightly broadcasts. These, he believed, could help

generate a consumer market for Westinghouse wireless products and generate publicity,

too, for the Westinghouse name.

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[44] "Phonograph's Music Heard on Radio Phones; 400 Pittsburghers Listen to Selections Transmitted by Local Inventor," *New York Times*, Dec. 26, 1919, 3.

[45] Davis, "The Early History of Broadcasting in the United States," 191-199.

[46] Ibid.

In setting out the principles that would guide this endeavor, Davis noted the importance of working "hand in hand with the press" to publicize programs. In fact, he said, "One of the earliest decisions was the necessity of building up and obtaining the necessary public interest in our efforts through the cooperation of the daily press."[47] He also noted that "we were most fortunately situated to accomplish this" since a leading figure in the local newspaper world was also an officer of a wireless company associated with Westinghouse.[48] But simply having newspaper connections and publicity was not enough. A proper occasion for the debut was also needed. "In our discussions, the subject of the first program was a matter of very careful deliberation," said Davis. "We wanted to do something unusual – we wanted to make it spectacular; we wanted it to attract attention."[49] The solution: launch on election night. "It happened that 1920 was the presidential election year," Davis said, "and the happy thought occurred to us to open our station on the night of the election returns and to broadcast this news."[50]

On election night, KDKA broadcast returns telephoned to the station from a local newspaper office, interspersing them with music.[51] One Westinghouse engineer later

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[47] Ibid., 196.

[48] From Davis, "The Early History of Broadcasting in the United States," 196: "Mr. A. E. Braun, the directing head of the *Pittsburgh Post*, a morning paper, and the *Pittsburgh Sun*, an evening paper, was an officer in the International Radio Telegraph Company, and the cooperation of these papers and his hearty support were immediately forthcoming." A. E. Braun is listed as president of both the *Post* and the *Sun* on the masthead of both papers as of election day, Nov. 2, 1920.

[49] Davis, "The Early History of Broadcasting in the United States," 197.

[50] Ibid.

[51] Most accounts, including the recollections of Davis and Conrad, identify the *Pittsburgh Post* as the source of KDKA's election returns. Balk (*The Rise of Radio*, 36) writes that both the *Pittsburgh Post* and the *Pittsburgh Sun* served as sources of KDKA's election-night information, with the arrangements having been made by Davis. Davis's own account ("The Early History of Broadcasting in the United States") reports that the returns were provided by the *Pittsburgh Post* and does not mention any returns coming from the *Pittsburgh Sun*. In a 1941 KDKA recreation of the 1920 broadcast, the announcer reports that "We are receiving these returns through the cooperation and by special arrangements with the *Pittsburgh Post*

recalled that the company's new manager of radio engineering called in from the hall during the broadcast to report that "the audience preferred less music and more election returns."[52] Later that week, reports on the Westinghouse station's broadcast in the *Pittsburgh Post* and its sister paper, the *Pittsburgh Sun*, predicted that within four years, radio would become a universal medium for election-night reporting.[53] However, in a departure from other instances of newspapers touting their association with new technology for disseminating election returns, the reaction of the *Post* and the *Sun* was relatively subdued, and the papers were mute on their own role. Stories did not appear for several days. When brief and almost identical stories did appear, they ran on inside pages rather than the front.[54] The lead in each story described the event merely as "one of the interesting sidelights of the election."[55] And in perhaps the most curious feature of these accounts, the *Post* and *Sun* stories cited "press association wires" as the source of the bulletins, leaving out any newspaper role in telephoning bulletins to the radio station.[56]

and *Sun"*; from KDKA, "KDKA's Twenty-First Birthday Party," radio broadcast, Pittsburgh, Nov. 1, 1941, from the collection of J. David Goldin. In any event, the *Post* and the *Sun* were sister papers. The masthead of both on Nov. 2, 1920, lists different managing editors but the same officers and the same general office location, Wood and Liberty Streets (also identified in the *Post* as the Post Building). In a 1936 history of the *Pittsburgh Post-Gazette*, J. Cutler Andrews writes that in 1906, the *Post*, which was a morning paper, started the *Sun* as an afternoon paper (J. Cutler Andrews, *Pittsburgh's Post-Gazette* (Boston: Chapman & Grimes, 1936), 294). Andrews also writes that around 1927, shortly before a major realignment of ownership of newspapers in Pittsburgh, the same estate owned both the *Post* and the *Sun* (p. 291).

[52] Little, "The Reminiscences of Donald G. Little," 26; also in Little, "Dr. Conrad Founds KDKA," 73.

[53] "Wireless Phone Proves Success on Election Night; Westinghouse Concerns Distribute Returns From East Pittsburgh Plant; Predict Great Future," *Pittsburgh Sun*, Nov. 4, 1920, 4, and "Returns One of Election Features," *Pittsburgh Post,* Nov. 5, 1920, 16.

[54] "Wireless Phone Proves Success on Election Night," *Pittsburgh Sun*, Nov. 4, 1920, 4; and "Returns One of Election Features," *Pittsburgh Post*, Nov. 5, 1920, 16.

[55] "Wireless Phone Proves Success on Election Night," *Pittsburgh Sun*, Nov. 4, 1920, 4; and "Returns One of Election Features," *Pittsburgh Post*, Nov. 5, 1920, 16.

[56] "Wireless Phone Proves Success on Election Night," *Pittsburgh Sun*, Nov. 4, 1920, 4; and "Returns One of Election Features," *Pittsburgh Post*, Nov. 5, 1920, 16.

Though there has been a historical pattern of news organizations touting their connection with new technological wizardry on election night, the KDKA episode suggests that this is not necessarily a uniform response. What is relevant here, however, is that Westinghouse officials saw election night as an opportunity to advance their own commercial and technological agenda by latching onto election night as an important venue for rolling out new technology. Westinghouse would go on to become a major broadcaster in markets around the country and was not shy over the years about making claims for the historic status of what it had done on election night in 1920, even if the iconic status of that broadcast was not established right away.[57]

Election-Night Continuity in the Broadcasting Era

By the next presidential election in 1924, however, the KDKA broadcast had come to assume the legendary proportions that would remain standard fare in histories of

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[57] In an account of KDKA that Westinghouse put together in the 1940s as part of a larger history of its pioneering status in broadcasting, Westinghouse claimed that the election-night broadcast was a "huge success" and "a national sensation, acclaimed by newspapers all over the country": Westinghouse Electrical Corporation, "Appendix B: History of Radio Broadcasting and KDKA," circa the 1940s, 60, included in Donald G. Little, "The Reminiscences of Donald G. Little," Columbia University Oral History Collection on Microfiche, Part V (New York: Columbia University Oral History Research Office, Radio Unit, 1984). However, in addition to the limited nature of the accounts in the *Post* and the *Sun*, the event was not the immediate subject of reporting in several publications for radio enthusiasts, according to Balk, *The Rise of Radio*, 37.   A search of the ProQuest New York Times Historical and Washington Post Historical databases also turns up no articles in 1920 (and not until 1922 in the *Post* and 1924 in the *Times*) about the KDKA election-night broadcast. The same silence in late 1920 was evident in a check of the ProQuest American Periodical Series database. A check of the NewspaperArchive.com database, searching the 192 newspapers with archived editions (as of May 19, 2008) between election day, 1920, and the end of that year, turned up no stories that mentioned either combination of (a). "Westinghouse", "election", and "Pittsburgh", or (b) "KDKA" and "election." Even accounting for both the fact that these tend to be primarily small newspapers and that there is less than perfect accuracy in such searches because of the inherent limitations in scanning newspaper pages from that era, the failure to retrieve any articles suggests that the broadcast was not an immediate "sensation" and that the fame of this event developed over time with later celebratory accounts. A similar check of the Readex America's Historical Newspapers database yields similar results. As for Westinghouse spreading word of its pioneering role in radio through KDKA, see for example, Davis, "The Early History of Broadcasting in the United States," in 1928. By the 1924 political season, David himself was already known as the "father of broadcasting" – see, for example, "KDKA Head Expects Largest Vote Poll As A Result of Radio," *Washington Post*, July 13, 1924, 15.

broadcasting and journalism.[58] In a celebratory account, the *New York Times* reported that the four-year anniversary of that election-night broadcast was witnessing something "unique" in the "long history of invention."[59] In those four years, radio was seen as accomplishing what it had taken the steam engine, the steamboat, the telephone and the airplane "a generation or more" to do, becoming "so much a part of our national life."[60]

Indeed, radio was all the rage by 1924. Dozens of newspapers owned radio stations. So did churches, schools, theaters, hardware stores, radio clubs, factories, civic organizations, police departments, and utility companies.[61] Political candidates advertized on radio. Millions of Americans tuned in. And on Nov. 4, 1924, the same sort of free-for-all that had characterized earlier injections of new technology into the election-night scene reappeared with the new medium. Many interests vied through advance publicity to grab a share of the expected audience. Radio stations would provide both election news and entertainment. News venues would seek to entertain. Entertainment venues would seek to inform. All sorts of other entities were hitching themselves both to widespread interest in election returns and widespread excitement over radio by inviting the public in to hear the news over the airwaves – from a purveyor of radio equipment in Fitchburg, Massachusetts, to a high school in Marysville, Ohio, to

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[58] "Radio Broadcasting Started at KDKA Four Years Ago Today," *New York Times*, Nov. 2, 1924, sect. 8, 16.

[59] Ibid.

[60] Ibid.

[61] U.S. Department of Commerce, Bureau of Navigation, *Radio Service Bulletin*, No. 83 (March 1, 1924), 12-21, Federal Communication Commission, http://www.fcc.gov/fcc-bin/assemble?docno=2403.

both the YMCA and YWCA in Titusville, Pennsylvania.[62] At the New Amsterdam

Theater in New York, where the new fall edition of the Ziegfeld Follies was "Glorifying

the American Girl," patrons were assured they would get to hear returns by radio.[63] From

the site of the third annual National Radio Exposition, then in its second day and drawing

thousands of visitors to see a reported 175 exhibitors at the Grand Central Palace in New

York, celebrity entertainer Eddie Cantor was slated to host an election-night "frolic"

mixing returns and an on-air variety show.[64] The *New York Times* reported with

excitement that several hundred stations nationwide would get in on the election-night

action, sending out news "in the ether" to an "unprecedented audience" numbering as

many as 20 million.[65] The strongest of the American stations had a reach of hundreds of

miles. The signal of at least one – Pittsburgh's KDKA, in fact – was said to be received

as far away as England.[66] The *Times* ran a schedule for some 33 stations from Boston to

San Francisco, with starting times and the wave lengths necessary to tune in.[67] Election

night would also provide an opportunity for coast-to-coast broadcasting by radio stations

[62] "Election Returns By Radio," *Fitchburg (Mass.) Sentinel*, Nov. 4, 1924, 11; "Radio Party at the High School," *Marysville (Ohio) Evening Tribune*, Nov. 4, 1924, 1; "Will Receive Election Returns at City Hall," *Titusville (Pa.) Herald*, Nov. 4, 1924, 10.

[63] "New Fall Edition Ziegfeld Follies," *New York Times*, Nov. 2, 1924, sect. 7, 4.

[64] "Latest Improvements in Radio to be Displayed This Week," *New York Times,* Nov. 2, 1924, sect. 8, 12; "Marconi, By Flash, Opens Radio Show," *New York Times*, Nov. 4, 1924, 12.

[65] Although this figure appears in a *New York Times* article in advance of the election ("National Audience to Hear Election Returns by Radio," Oct. 26, 1924, sect. 9, 14), a *Times* commentary following the election pointed out that "Just how large the audience was nobody knows, for there are no trustworthy statistics of the number of receiving sets made by amateur radiologists, and the figures of the regular manufacturers do not include the achievements of this non small army" ("Topics of The Times," Nov. 6, 1924, 18).

[66] "Trains Get Radio Returns," *New York Times*, Nov. 6, 1924, 21.

[67] "National Audience to Hear Election Returns by Radio," *New York Times*, Oct. 26, 1924, sect. 9, 14; "Election Returns by Radio," *New York Times*, Nov. 2, 1924, sect. 8, 12. Similar stories ran elsewhere. An Illinois newspaper, for example, listed 19 stations between the East and West Coasts that would be broadcasting; "Radio to Give Election Returns," *Decatur (Ill.) Review*, Nov. 4, 1924, 4.

linked together – a precursor to national network broadcasting. Humorist Will Rogers

was among the celebrities who would take part in keeping that unseen audience

entertained in between returns.[68]

But as with the arrival of the telegraph, which created new election-night

opportunities at the same time it generated chaos with a flood of more rapidly available

returns, the arrival of radio also prompted a new crisis: how to organize and present the

numbers-driven election-night information in a comprehensible and digestible way to

listeners. In 1924, a *New York Times* critique noted that "the gathering and distribution

of election returns was a wholly unfamiliar task for most of the radio managers and their

announcers." [69] The exception was a station that "had the wisdom, or perhaps it was the

good fortune, to secure the services as announcer of an experienced journalist who had

lived through election nights before and knew both that early returns are valueless as they

stand and that when skillfully interpreted they may be a fairly safe basis for prophecy as

to final results of the voting."[70] These early attempts, one NBC executive later wrote in

an internal memo, resulted in "a mere hodgepodge of unintelligible returns." [71] The

message was clear. Broadcasters attempting to supply election-night news risked

embarrassment if they operated their wondrous new technology without adopting an

established set of journalistic practices – newspaper practices – that had been worked out

over time to derive meaning from a stream of early returns. "The election night

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[68] Archer, *History of Radio to 1926*, 347.

[69] "Topics of The Times," *New York Times*, Nov. 6, 1924, 18

[70] Ibid.

[71] Avery Marks, NBC memo to John W. Elwood, Oct. 24, 1932, Box 9, Folder 38, Central Files, NBC Records, WHS.

broadcaster of the future," declared the *Times*, "will be a man who can perform the computation of averages 'in his head' and very rapidly, and his 'conceding' and 'claiming' will be as close to the truth as are those made in newspaper officers hours and hours before all the ballots are counted."[72] Two other things would be required of this future radio journalist. One was the reading of returns in round figures rather than giving all the digits of large numbers. The other test of competence was the ability to provide "explanations and interpretations rather than exact figures."[73] At stake was the gratitude of listeners.

By 1928, the *New York Times* coverage of the radio industry's election-night plans provides evidence of evolving standards for the broadcasting of returns – changed by doing something new in radio, but not at all new in election-night journalism. This was a recognition of the importance of professionalism in the gathering and reporting of returns, along with the attendant prestige for a job well done. The intertwining of news and entertainment was still very much in the picture. But the greatly enhanced efforts to report the news merited yet another iteration of the "story of the story." Blessed with sometimes elaborate broadcasting facilities but lacking their own stables of reporters and analysts, radio stations and networks would recruit help and collaborate with news organizations for the election. And certain sounds captured for the radio audience would lend gravity to the broadcast, too:

> The clatter of adding machines and typewriters, alien sounds in a broadcasting studio, will replace symphonies and solos in large studios of the National Broadcasting Company Tuesday night. Instead of announcers in dinner jackets and prima donnas in red velvet gowns there

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[72] "Topics of The Times," *New York Times*, Nov. 6, 1924, 18.

[73] Ibid.

will be newspaper men and tabulators. The studio will be a newsroom for the night.[74]

The "tabulators" here were people, and the *Times* reported that a "staff of writers, analysts and tabulators in the studio would act as a human sieve."[75] Their job would be to make sense of returns arriving from a newsgathering force of 100,000 people – an estimate of the corps who would be gathering complete nationwide returns for three national wire services cooperating with NBC. It was said to be "the greatest newsgathering combination ever effected, an organization with representatives in every hamlet, town and city in the United States."[76] Only comprehensible figures would be read into the microphones. Their significance would be explained by "political experts." CBS would be employing "expert statisticians," too, and the vote counts would be analyzed by "political authorities and writers."[77]

Drawing up plans for coverage in 1932, one NBC executive, Avery Marks, circulated an internal memo suggesting that 1928 met with only mixed success in providing listener-friendly reports.[78] "Experience of 8 years in election night broadcasting has convinced me," he wrote, "that the average broadcast is a mere hodgepodge of unintelligible returns."[79] He reported achieving limited success on an alternative way of reporting vote counts – as comparative percentages or ratios, both for the running totals and the margin of difference between candidates. The condensation of

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[74] "Election Returns on Radio Over Nation-Wide Network," *New York Times*, Nov. 4, 1928, 154.

[75] Ibid.

[76] Ibid.

[77] Ibid.

[78] Marks to Elwood, Oct. 24, 1932, WHS.

[79] Ibid.

information that he suggested would eventually become the prevailing philosophy for election night broadcasting.[80] But it would take time in the new medium to meet expectations that had been carried over from the public's experience of election nights ruled by newspapers.

In a 1968 journal article – one of the rare explorations of the early history of election-night broadcasting – Thomas W. Bohn concluded that the reporting of returns had provided an important "testing ground" for radio broadcasting.[81] Working primarily from accounts in the *New York Times* and a trade publication, *Broadcasting*, he found that election-night practices on radio took decades to evolve into full-time, hard-news coverage featuring expert interpretation and analysis. This development coincided with an increasing ability over that time to gather and aggregate voting results. It also coincided with a slow realization that the listening public would be receptive to such broadcasts and a rising awareness that sponsors would be willing to support an election-night format in which news predominated.

From the 1920s to the 1940s, as radio established an ever more durable hold in American culture, election night was serving as a laboratory for working out important aspects of the live broadcasting of complex news events. But the idea of radio as a venue for news – that radio could, should, or would be a venue for news – was not at all obvious at the beginning of this period. And as early as 1924, efforts by broadcasters to disseminate election returns were among the precipitating events in what came to be

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[80] For example, in a letter to a listener in 1940, NBC President Niles Trammell countered a complaint about the election-night broadcast by asserting that "it is our theory that only ratios and round figures can be understood on the radio, instead of numerous digits which would confuse the listener."; Niles Trammell, letter to F.A. Pearson, Nov. 14, 1940, Box 76, Folder 75, Central Files, NBC Records, WHS.

[81] Bohn, "Broadcasting National Election Returns: 1916-1948," 267-86.

known as the Press-Radio War.[82] A central issue in this battle between purveyors of old

and new technology was whether wire service bulletins should be made available to radio

stations. Newspaper publishers were certainly not uniform at first in their resistance to

radio news, especially those who saw radio as yet one more technology to help position

them at center stage in the political theater of election night. A historian of the Press-

Radio War has argued that the stakes for newspapers in seeking to retard the growth of

radio news were not just economic in nature. [83] To be sure, it was not lost on publishers

that radio was fairing better than newspapers in the early years of the Depression. But

publishers were also driven to maintain their position as powerful and important figures

in the flow of information in American society. The history of dissemination of election

returns by newspapers before radio makes clear that publishers would go to great

expense to get the word out well in advance of their printed editions – not to make an

immediate profit, but to stake a claim to social and cultural importance.

Election night in 1932 was a pivotal point in the darkening relationship between

radio and print. The provision of news wire bulletins to the radio networks – following a

great deal of intrigue driven by intense rivalry between competing wire services – was

too much for the publishers to bear. As a result, networks were cut off from their sources

of wire bulletins and an association of newspaper publishers resolved to stop carrying

radio schedules. As the battle lines hardened, broadcasters began investing in their own

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[82] A comprehensive study is provided by Gwenyth L. Jackaway, *Media at War: Radio's Challenge to the Newspapers, 1924-1939* (Westport, Conn.: Praeger, 1995). See also Chapter 3, "Growing Pains; The Story of the Press-Radio War," in Paul W. White, *News on the Air* (New York: Harcourt, Brace and Company, 1947), 31-42; and Chapter 5, "The Press-Radio War," in Edward Bliss, Jr., *Now the News: The Story of Broadcast Journalism* (New York: Columbia University Press, 1991), 39-44.

[83] This is a central argument, for example, in Jackaway's *Media at War*: "This battle was not just fought over money, but over power" (p. 9).

news operations. A truce was in place in advance of the 1936 election, which featured

radio news reports by a short-lived collaborative enterprise known as the Press Radio

Bureau. And while the landscape of election-night journalism had shifted yet again, a

transcript of NBC's offering shows that some of the most salient features included the

continuation of practices that predated radio.[84] The "story of the story," for example,

would continue to be an important aspect of election-night broadcasting in 1936. Shortly

after the broadcast began, commentator John B. Kennedy set the scene for his audience:

"you probably hear the sounds of machines, Morse Code operators, typewriters,

newspaper men, rewrite men getting together the greatest story of the year…" After a

"campaign of turbulence," he continued, "now the big story is going to be told, and told

to you first by radio."[85] The head of the Press Radio Bureau, James W. Barrett, then

went on to describe in detail the technology of election-night reporting and to estimate

the human component: that across the country, the worlds of newspaper and radio had,

between them, engaged 200,000 people in efforts to bring election returns to the public.[86]

The forecasting of election results on radio, as it reached for respectability, was also

being done much as newspaper journalists had been doing for decades, comparing the

incoming returns to historical data and looking for consistency or divergence from past

patterns.[87] In 1936, as on other election nights in the first generation of radio,

deployment of a new technology had come to rest on a solid foundation of continuity

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[84] "Transcript of Press-Radio Election Results and Special Election Broadcasts as Presented Over NBC-Red Network," Tuesday, Nov. 3, 1936," Box 49, Folder 10, Central Files, NBC Records, WHS.

[85] This took place around 6:35 p.m..; "Transcript of Press-Radio Election Results…" p. 1.

[86] "Transcript of Press-Radio Election Results…" p. 2.

[87] For example, at about 9:15, the NBC "Red" network reported that "According to early returns, traditionally Democratic states have cast their ballots true to form. Early results show Roosevelt ran way ahead of his rival in those states" ("Transcript of Press-Radio Election Results…" p. 11).

with the familiar – extending values, practices, and tropes that were already well established.

Engaging the Audience

Radio broadcasters were discovering, as Bohn noted, that their audience had a hearty appetite for an all-news format on election night, and that companies which were used to sponsoring night-time entertainment shows on radio could see the value in sponsoring all-news shows on election night. Eventually, the all-news format would prevail as the rule in election-night broadcasting.[88]

Still, the values associated with entertainment – showmanship, storytelling, drama, and wonders – remained part of the news-laden broadcasts on election nights, both on radio and later on television. Avery Marks's internal NBC memo in advance of the 1932 election shows a network executive worrying about how to keep the audience listening in the event of a landslide. The possible solutions included "interpretations," "late returns," and "showing by figures that all is not over yet."[89] Even the gathering and tabulating of numbers could be turned into a potentially audience-engaging activity, election after election, as radio matured. That's what happened in 1932 when broadcasters positioned their microphones to pick up the sounds of telegraph devices,

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[88] As late as 1940, the *New York Times* coverage of the broadcasting of election returns highlighted the newsworthiness of the precedence given to bulletins. Under the headline "Election Data Fill Programs on Air," the article began: "Virtually all radio programs were disrupted, or at least interrupted, last night to broadcast election returns in the greatest national hook-up ever assembled for a single event." The story went on to report that "From 9 o'clock on, Columbia maintained a sustaining program of music which could be stopped at any time for readings of election returns"; "Election Data Fill Programs on Air," *New York Times*, Nov. 6, 1940, 5. Bohn reported that by 1944, the radio networks had were providing non-stop coverage of the returns without any entertainment segments (Bohn, "Broadcasting National Election Returns: 1916-1948," 279).

[89] Marks to Elwood, Oct. 24, 1932, WHS.

typewriters, and calculators.[90] And it's what happened in 1932 when WABC radio – the

flagship station of the Columbia Broadcasting System – turned the proverbial man-vs.-

machine trope on its head in the choice of an unusual outside expert for the tabulation of

returns. Producers of the election-night broadcast retained and promoted the services of

one Salo Finkelstein to tabulate returns – not by machine, but in his head.[91]

Finkelstein, then in his mid 30s, was one of those rare and wondrous

mathematical prodigies, or "mental calculators," who have been celebrated over time for

their abilities to remember long sequences of numbers and carry out complex calculations

– not only without the aid of an adding machine, but faster.[92] He had discovered and

nurtured this talent as a young adult in his native Poland, and he turned to making a living

with it. He also sought to make a name for himself. He went on tour. He presented

himself for study before scientists in Europe, and then landed in the United States in the

winter of 1932. By that September, he managed to capture the attention of the *New*

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[90] Orrin E. Dunlap Jr., "Lessons of the Campaign," *New York Times*, Nov. 13, 1932, Sect. 8, 6.

[91] "All-Night Returns by Radio Planned," *New York Times*, Nov. 8, 1932, 15. Finkelstein's upcoming appearance was also noted two days earlier in Orrin E. Dunlap Jr., "Elaborate Plans for Tuesday; Radio Will Sidetrack Regular Programs for Election Returns – Analysts to Comment on the Bulletins," *New York Times*, Nov. 6, 1932, Sect. 8, 6.

[92] Works studying or discussing Finkelstein special abilities include: Steven B. Smith, *The Great Mental Calculators; The Psychology, Methods, and Lives of the Calculating Prodigies, Past and Present* (New York: Columbia University Press, 1983), 283-288; James D. Weinland, "The Memory of Salo Finkelstein," *The Journal of General Psychology* 39 (October 1948), 243-257; W. A. Bousfield and H. Barry, Jr., "The Visual Imagery of a Lightning Calculator," *The American Journal of Psychology* 45, no. 2 (April 1933), 353-358; James D. Weinland and W.S. Schlauch, "An Examination of the Computing Ability of Mr. Salo Finkelstein," *Journal of Experimental Psychology* 21, no. 3 (1937), 382-402; "Human Calculator Demonstrates Skill," *New York Times*, Oct. 22, 1932, 17. A 1975 journal article on mnemonists indicated that Finkelstein was the subject of an additional study published in Europe in 1933: B. Sandor, "Die Gedächtnistätigkeit und Arbeitweise von Rechenkünstlern," *Charakter*, 1932, *1*, 47-50; cited in Evan Brown and Kenneth Deffenbacher, "Forgotten Mnemonists," *Journal of the History of the Behavioral Sciences* XI, no. 4 (October 1975), 342-349.

Yorker, where he was profiled in a "Talk of the Town" piece titled, simply, "Magician."[93]

The *New Yorker* reported, among other things, that Finkelstein had been brought to the

United States by the Psychological Corporation – a high-brow group promoting the

advancement and practical applications of psychology – and had wowed scholars at

Harvard, Yale, and elsewhere.[94] A month later, the *New York Times* recounted

Finkelstein's appearance at the National Business Show in New York, where he chewed

on a cigar stub and performed privately for reporters and later for the public.[95] And by

election day, amidst heated competition between the growing nationwide radio chains,

the *Times* took note of the fact that Finkelstein would be featured on WABC, adding up

returns on election night.[96] *Time* magazine later reported on his performance in a piece

titled "Calculator." "As returns came in," *Time* wrote, "he computed them more quickly

and quietly than adding machine operators," and then "whispered totals to the

announcer."[97]

   After the 1932 election, Finkelstein continued to be a curiosity and itinerant

showman. He was often referred to as "Dr. Salo Finkelstein," though at least one study

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[93] "Magician," in The Talk of the Town, *New Yorker*, Sept. 17, 1932, 9. The *New Yorker's* electronic story archive identifies the authors of this piece as James Thurber and Charles Cooke, but the piece carries no byline in a copy of the magazine.

[94] An announcement of the founding of the Psychological Corporation by the editor of *Science*, James McKeen Cattell, and other leading psychologists is described in "The Psychological Corporation," *Science*, new series 55, no. 1416 (Feb. 17, 1922), 169-171, and in "A Corporation for the Advancement of Psychology," *Scientific Monthly* 14, no. 3 (March 1922), 302-304.

[95] "Human Calculator Demonstrates Skill," *New York Times*, Oct. 22, 1932, 17.

[96] "All-Night Returns by Radio Planned," *New York Times*, Nov. 8, 1932, 15. Finkelstein's upcoming appearance was also noted two days earlier in Dunlap, "Elaborate Plans for Tuesday," *New York Times*, Nov. 6, 1932, Sect. 8, 6.

[97] "Calculator," *Time*, Nov. 14, 1932.

later mentioned that he did not have an advanced education.[98] An ad in *Science News Letter* announced that "the prodigy Dr. Salo Finkelstein" would be interviewed on the Columbia Broadcasting System and would demonstrate "lightening calculation."[99] He was the subject of a syndicated article in the late fall of 1932 that appeared in such places as Waterloo, Iowa, and Sheboygan, Wisconsin, complete with a photograph of the "bespectacled, round-shouldered, rather wistful figure." [100] Stories reported that no less a personage than Albert Einstein had commented on his abilities.[101] Finkelstein continued to be the subject of study at American universities, and accounts of his talents were reported in scholarly journals.[102] Things he said showed up as one-liners in lists of quotations on newspaper editorial pages, where he was identified in some cases as a "Polish-Jewish mathematical wizard."[103] He also passed through communities such as

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[98] Weinland, who studied Finkelstein's abilities at New York University after Finkelstein's arrival in the Unites States in 1932, reported that "he was not a highly educated man. At the time he became interested in numbers he was a clerk." Weinland, "The Memory of Salo Finkelstein," 243-257. The references to Finkelstein as "Dr." appear in a wide variety of contemporary accounts, including those cited here from the *New Yorker* and the *New York Times*.

[99] "Lighting Calculation," advertisement, *Science News-Letter* 22, no. 606 (Nov. 19, 1932), 329.

[100] The article by Paul Harrison, NEA Service Writer, appeared in a number of newspapers, including "A Second Is A Long Time!," *Sheboygan (Wis.) Press*, Nov. 14, 1932, 3, and "A Second Is A Long Time!" *Waterloo (Iowa) Sunday Courier*, Nov. 13, 1932. This feature also appeared earlier that month, before the election, in the *Syracuse (N.Y.) Herald*, Nov. 2, 1932, 14, with the headline "A Second Is a Long Time in Mind of Dr. Finkelstein, Marvel of Mathematicians."

[101] For example, the Harrison article reports: "Professor Einstein says: 'He has such an unusual mind that for him a second is a relatively long time.'" (Paul Harrison, NEA Service Writer, "A Second Is A Long Time!," *Sheboygan (Wis.) Press*, Nov. 14, 1932, 3). Available accounts indicate that Finkelstein may be the source of this information. The *New York Times*, reporting on Finkelstein's appearance at the National Business Show, reported this: "He said that after he had given a private performance for Professor Einstein the savant told him that 'you can do these things because for you a second is a relatively long time in your mental processes.'" See: "Human Calculator Demonstrates Skill," *New York Times*, Oct. 22, 1932, 17.

[102] Bousfield and Barry, "The Visual Imagery of a Lightning Calculator," 353-358; Weinland and Schlauch, "An Examination of the Computing Ability of Mr. Salo Finkelstein," 382-402.

[103] See for example, *Amarillo (Tex.) Globe*, Feb. 3, 1933, 4, and "So They Say," *Fitchburg (Mass.) Sentinel*, Nov. 25, 1932, 6 (both refer to Finkelstein as a "Polish-Jewish mathematical wizard"). Other examples of brief references to Finkelstein statements include: "So They Say," *Bismarck (N.D.) Tribune*, Dec. 13, 1932, 4, and "Answers to Questions," *Lincoln (Neb.) State Journal*, Dec. 5, 1936, 8.

Elyria, Ohio, where a front-page story announcing his appearance before a high school

assembly in 1936 noted that he had been "described as 'the world's greatest calculating

genius.'"[104] The story also reported that that his "speed and his accuracy won him great

fame on November 8, 1932, when he tabulated presidential election returns."[105] That

same "mathematical wizardry" was recalled in June 1936 when the *Washington Post*

reported that "the most interesting sidelight" of the Republican convention that month

was that CBS had again retained Finkelstein's services.[106] In fact, he reportedly turned

up at CBS radio on election nights as late as 1944, and he became part of the "story of the

story" of election coverage in a 1952 retrospective by veteran broadcasters Robert Trout

and Paul W. White:

> Dr. Finkelstein was a lightning calculator of the highest voltage. It
> was his gift to be able, after a glance at a blackboard crammed with
> figures, to write a summary such as: "Roosevelt: 3,656,789, now leading
> in 19 states having 277 electoral votes; Dewey, 2,991,654, leading in
> seven states with 95 electoral votes." [107]

The descriptions of his election-night demeanor make him sound a bit like one of Herman

Melville's inscrutable characters. He would show up in the newsroom, juggle prodigious

figures, and then, wrote Trout and White, "when the last word had been spoken and the

microphones turned off, he would collect his fee in cash and promptly vanish."[108] A

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[104] "Calculating Genius to Speak at E.H.S. Thursday Morning," *Elyria (Ohio) Chronicle-Telegram*, May 12, 1936, 1. A newspaper announcing his appearance before students in Lima, Ohio, wrote that he would "present one of his famous illustrated lectures." See "South High School Notes," *Lima (Ohio) Sunday News*, Nov. 17, 1935, 7.

[105] "Calculating Genius to Speak at E.H.S. Thursday Morning," *Elyria (Ohio) Chronicle-Telegram*, May 12, 1936, 1.

[106] "On the Air Today," *Washington Post*, June 9, 1936, 22.

[107] Robert Trout and Paul W. White, "What to Look For on Election Night," *Collier's*, Nov. 8, 1952, 22-24.

[108] Ibid.

generation later, his mathematical exploits were invoked in "Ripley's Believe It Or Not!" The syndicated newspaper feature repeated what had been reported about him in the 1930s: that before his arrival in the United States, he had replaced 40 humans with adding machines in an agency of the Polish government.[109] Finkelstein and CBS each had something to gain by his role on election nights. Calculation in a tense atmosphere in which accuracy had come to be prized was certainly part of the picture. Trout and White recounted this example:

> One year, with the figures flowing fast, there came a desperate moment, a crisis when Dr. Finkelstein's totals and the tabulations supplied by a battery of add-machines didn't jibe. In a flash, the doctor recalculated. It took the workers at mechanical computers a couple of flashes longer to repeat their work. Editors, writers, telephone operators crowded around. For a few seconds, people forgot to breathe. Then: the announcement. It was simple really; the adding machine had been wrong.[110]

But Finkelstein's calculations were more than just a mathematical aid to the network's reporting. From his first election-night broadcast, he lent an air of wonder and celebrity to the mix, and he gained exposure in return. By the 1952 election, Finkelstein's days as an election-night wonder had come to an end. What television viewers would see instead, noted Trout and White, was an "ultramodern 'mechanical brain.' "[111]

While radio was ascendant as an election-night medium, newspapers did not concede their own demise as important players, even in the dissemination and analysis of returns before their first pint editions hit the streets. Crowds continued to gather around newspaper buildings looking for bulletins. Newspaper reporters and editors appeared on

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[109] "Ripley's – Believe It of Not!" *Greeley (Colo.) Tribune*, Dec. 4, 1975, 44.

[110] Trout and White, "What to Look For on Election Night," 24.

[111] Ibid.

air as experts in the analysis of returns. Newspapers also made themselves valuable to active radio audiences by publishing prediction guides and blank score sheets on or before election day. The practice of following returns with printed score sheets dated back to at least the late 19th century, when bulletins were available in some places by telephone. There are accounts from 1892 of a telephone company in New York providing customers with printed cards for use on election night, complete with historical data and room to jot down returns.[112] In the radio era, newspapers adopted this practice. Ahead of the 1924 election and again in 1926, the *New York Sun* ran ads in the *New York Times* offering tabulation forms to help radio listeners keep track of returns. [113] The 1924 ad billed the "tally sheets" as "something entirely new," certain to "add zest" to the evening, and urged listeners to follow returns that the *Sun* would be providing on radio station WEAF.[114] The 1926 ad for the *Sun*'s "election sheets" promised three pages "devoted to a comprehensive system for tabulating election returns as they come over the radio," including 1924 voting data to be used in spotting trends.[115]

Newspapers' publication of blank score sheets, historic data, and the expert knowledge needed to assess the returns as they rolled in became regular features of pre-election editions. In 1936, the *Morning News* in Florence, South Carolina, invited

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[112] "Election Returns," *Electrical Review*, Nov. 19, 1892, 151, cited in Marvin, *When Old Technologies Were New,* 218.

[113] "For Radio Election Returns You Must Have Tally Sheets," advertisement, *New York Times*, Nov. 1, 1924, 18; "Follow the Election by Radio on the Election Sheets in TO-DAY'S Radio Section of The New York Sun," advertisement, *New York Times*, Oct. 30, 1926, 9.

[114] "For Radio Election Returns You Must Have Tally Sheets," advertisement, *New York Times*, Nov. 1, 1924, 18.

[115] "Follow the Election by Radio on the Election Sheets in TO-DAY'S Radio Section of The New York Sun," advertisement, *New York Times*, Oct. 30, 1926, 9.

readers to "Test Your Skill In Election Forecasting."[116] The same year, the *Fayetteville Daily Democrat* in Arkansas ran its tally sheet prominently on the front page of its election-day editions.[117] Wire service editors also prepared score sheets to be published by their newspaper clients. In 1940, a guide titled "The ABC of Interpreting Election Bulletins" was circulated widely by the Associated Press Feature Service.[118] It included an electoral map with state-by-state data from the 1936 election and stars by the states that had voted with the majority for the past 40 years. The story suggested "keys to important trends" on election night. These included economic and demographic considerations ("industrial precincts," "farm vote," and "city, rural and suburban contrasts") as well as groupings of states by size ("The Big Ten") and region.[119]

In the radio era, newspapers and their wire services were not alone in seeking to be indispensible to broadcast audiences through materials printed in advance. Even in this aspect of election-night culture, there was competition from other interests – including radio stations themselves – which generated their own score sheets. An archive of NBC records includes an elaborate full-page "TABULATON SHEET for keeping posted on election night" in 1936.[120] Prominently displayed are the call letters of two NBC stations on Los Angeles – KECA and KFI. Directions for using the chart promised

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[116] "Test Your Skill In Election Forecasting," *Florence (S.C.) Morning News*, Nov. 3, 1936, 3.

[117] "Here's a Tally Sheet for Election Night," *Fayetteville (Ark.) Daily Democrat*, Nov. 3, 1936, 1. The same tally sheet appeared in other papers, including *Connellsville (Pa.) Daily Courier*, Nov. 3, 1936, 8.

[118] This Associated Press feature, "The ABC of Interpreting Election Bulletins," appeared on Nov. 3, 1940, in such papers as the *Cumberland (Md.) Times*, 2; *Montana Standard*, Butte, 28; and the *Oakland (Calif.) Tribune*, 44.

[119] Ibid.

[120] "Here's your TABULATION SHEET for keeping posted on election night-NOV. 3rd," undated, Box 49, Folder 10, Political Broadcasts and Election --1936, Central Files, NBC Records, WHS.

"we will broadcast standing of states every hour."[121] In fact, for every hour from 10 p.m.

to 3 p.m. there were spaces beside each state to "jot down the party side which is leading"

in each state, plus room to note the final outcome.[122] The tally sheet duly noted the

sponsor for the election-night broadcast – A & P Food Stores – and at the bottom urged

voters to vote no on a ballot proposition dealing with retail store licensing. [123]

Parties, Prestige, and the Center Stage

Score sheets were just one of the ways in which news organizations sought to take

center stage by addressing a robust public appetite for timely news and excitement on

election night. In the era of broadcasting, the newsroom itself continued to be a place for

the proprietors of news organizations to show off, further evidence of the unique place of

election night journalism in American culture. Special guests – cultural celebrities,

political figures, business leaders, and advertisers – were invited to see the inner

workings of the broadcast operations on these nights. In 1928, officials of NBC and

affiliated entities brought their wives and special guests to watch an election broadcast in

action. They crowded around a news announcer in the control room as he ad libbed his

coverage from "meagre information provided by cold hard fact," as an internal network

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[121] Ibid.

[122] Ibid.

[123] Exactly which entity produced this page – NBC, the stations, or the sponsor – is not clear, but there is one piece of evidence that suggests it might have come from a template for use by other NBC stations in the West. A handwritten note on the top of this document says "Complete file in KFSD" – the call letters of a San Diego station – and text on the tally sheet also suggests a focus on the West: "The A&P sponsorship of these broadcasts on both the Red and Blue N.B.C. networks is one of the most extensive programs ever put on the air in the West."

memo described the scene.[124] Four years later, an NBC executive would call for changes

in this arrangement to make it easier for the news staff to work – and get fed. In 1928, it

was recalled, the guests scarfed up the food and drink intended to sustain those producing

the election-night broadcast.[125] By 1940, NBC's election-night party was a huge

production, worthy of being detailed in a post-election story in the *New York Times*:

> Columbia and Mutual had room for only a few spectators at their
> election broadcasts, but at NBC the famous Studio 8-H, from which
> Arturo Toscanini directs the NBC symphony orchestra, was converted into
> a huge receiving room for wire and telephone reports of the returns. An
> audience of about 4,000 gathered in the studio as the guests of [Niles]
> Trammell, president of NBC, to hear the broadcasts and see the
> tabulations of the returns posted on a large scoreboard on the stage….
> The studio has seats for 1,400, but the seats were removed for the
> special election broadcast and guests stood on the floor, wandering in and
> out and to other NBC studios. A buffet supper was served from the
> stage.[126]

Four years later, in 1944, a photograph taken at the cavernous CBS election-night

headquarters in New York shows that the network had rallied, at least in terms of having

high-profile guests. Frank Sinatra, then just 28 and already a singing and acting sensation,

occupied a front-row seat beside actresses decked out in fur coats. All were just a few

feet from the action – reporters and assistants working at their desks, announcers

broadcasting returns from a raised platform. Dozens of other guests milled about, taking

in the busy newsgathering and reporting scene.[127] This practice of using election night to

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[124] Avery Marks, NBC memo to John W. Elwood, Oct. 24, 1932, Box 9, Folder 38, Central Files, NBC
Records, WHS.

[125] Marks to Elwood, Oct. 24, 1932, WHS.

[126] "Election Data Fill Programs on Air," *New York Times*, Nov. 6, 1940, 5.

[127] "Helen Sioussat: Photos – Election Night," Folder 6, Box 36, Helen Sioussat Papers, Series 7,
Subseries 3, Library of American Broadcasting, College Park, Md. Seated with Sinatra are Sioussat, a CBS
executive in charge of the Talks and Public Affairs Department. One of the guests is identified as Irene
Dunne, an actress and singer. Another guest seated next to Sinatra could be Anne Jeffreys, an actress and

show off for celebrities – and using the celebrities to confer status on the news operation

– continued into the era of television. Ahead of the 1949 state and local elections, WCBS

in New York issued a press release describing in detail how it would cover the returns on

radio and television. Special guests, it was noted, had been "invited to watch the returns

in the CBS television studios," and they would be interviewed for both radio and

television broadcasts.[128] Arthur Godfrey, a popular CBS radio and television entertainer,

was among them. So were the wives of two presidents, Eleanor Roosevelt and Margaret

Truman.

Before the days of radio, newspaper publishers and editors could be found

admitting select and privileged guests to watch the newsroom excitement, and this

phenomenon continued at newspapers into the era of broadcasting.[129] At the *New York

Times*, a copy boy named Arthur Gelb watched in 1944 as publisher Arthur Hays

Sulzberger and his wife, Iphigene, brought their after-dinner guests to watch the action.

They provided a "city-room audience" for the "election-night display."[130] Gelb, who

would go on to become managing editor of the *Times*, wrote in his memoir:

> The Sulzbergers enjoyed showing off the city room when it was operating
> at full tilt, and their guests seemed delighted to witness the making of the

singer who appeared with Sinatra in the movie *Step Lively* in 1944. For a synopsis of Sioussat's career, see "A Guide to the Papers of Helen Sioussat," Library of American Broadcasting, College Park, Md.

[128] "News from WCBS: WCBS Coverage of New York Elections On Radio, TV, To Be Sponsored," press release, Columbia Broadcasting System, Nov. 4, 1949, Box 29, Folder 5, Helen Sioussat Papers, Series 5, Subseries 2, LAB.

[129] References to the practice can be found in various accounts of election nights in the 19th and early 20th century. See, for example, Alexander McD. Stoddart's 1916 account, "How Newspapers Tell the Story of Election Day," *Outlook*, Nov. 8, 1916, 566ff ("…visitors crowd the reception room, and here and there specially favored ones are permitted to come within…."); see also Julian Ralph, "Election Night in a Newspaper Office," Scribner's Magazine XVI, no. 5 (November 1894), 531-544 ("… some notable public men …" were among those permitted to watch the election-night scene at a major New York newspaper in the late 19th century; p. 539.)

[130] Arthur Gelb, *City Room* (New York: G.P. Putnam's Sons, 2003), 70.

newspaper they would read at breakfast a few hours later. We in the city room, aware we were onstage, enjoyed it too, shouting a bit louder than usual, dashing about a bit more purposefully.[131]

The level of activity must have been a sight to behold, judging from the food consumed, which the newsroom aides documented in their own publication, *Timesweek*: "1,800 sandwiches, made of liverwurst, bologna, salami, Spam, roast beef, chicken, and egg salad."[132]   Generations after journalists first came to see their newsrooms as a wonder to behold on election night, the habit had not abated.

Election Night on Television: News and Showmanship

In fact, running through decades that witnessed changes in technology, society, and journalism, one of the abiding features of election night was its importance as a venue for news organizations to position themselves at center stage in the national political drama. Hosting parties was one means. The ever-present trope of the "story of the story" was another. Technological wizardry, too, remained an important element in the calculus. That there would be tremendous public interest was not in doubt as radio reached maturity and television became the newest player. But holding an audience was as much an issue for broadcasters as it had been for competitive newspaper publishers and their election-night contests in the century before. The era of an all-news format had arrived, but the values of entertainment and showmanship had certainly not disappeared.

In 1948, broadcasters began making detailed election-night plans at least as early as September, and these plans called for packaging the news with glitz. A planning

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[131] Ibid.

[132] Ibid., 70-71.

memo for a collaborative effort between NBC and *Life* magazine envisioned kicking off

the election-night broadcast at 9 p.m. by "televising all the hubbub and clatter of the huge

room in which NBC gathers its election returns and originates most of its broadcasting of

election results."[133] Radio had long been doing the same thing, conveying the excitement

of reporting an election by positioning microphones to capture the sounds of

newsgathering and calculating equipment in a busy newsroom.[134] Now, in plans for

election night in the early years of the television era, the newsroom itself would still be

part of the story.[135] And, as before, even calculation could be deployed not only for its

value in generating content, but as a visible indicator of the evening's heroic acts of

gathering and aggregating the returns under the intense pressures for timeliness and

accuracy. The visual appeal of the scene would include not only "milling guests,"

"clattering news tickers," and "huge wall charts upon which clerks are changing tallies as

the latest returns come in," but the human and mechanical machinery of election-night

number-crunching: "rows of operators of calculating machines."[136] There was a proposal

for "black magic presentation" of returns.[137] And later in the planning process, the

concepts for visual gimmickry became more developed, with cost estimates for each

element, including $53 for a "Tug o' War device," $65 for a "Tel-a tale Device," and $32

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[133] [Sid] James, "Election Night Television," memo to Mr. Heiskell, Sept. 24, 1948, Box 300, Folder 34, William Garden Papers, NBC Records, WHS.

[134] See for example Orrin E. Dunlap Jr., "Lessons of the Campaign," *New York Times*, Nov. 13, 1932, Sect. 8, 6. The story reported that in order to "inject realism," CBS "arranged telegraph instruments, typewriters and calculators in the studio" where a pair of political commentators were "in action at the microphone." While some "listeners objected to what they called 'the noise,'" there where others who "applauded the 'atmosphere' or background of realism, and called the WABC network's effort as 'an outstanding achievement in election broadcasting.'"

[135] James to Heiskell, Sept. 24, 1948, WHS.

[136] Ibid.

[137] Ibid.

for "Moving objects including elephants in train."[138] As the election drew closer, the list of "gadgets" grew longer, including a "Tele-tale" that would be "similar to the Times Bldg." [139] There was to be an elephant and donkey in a tug-of-war and cash registers described as "raze-ma-taze" for the "wind-up of the show," bearing the names of 11 major and minor-party presidential candidates.[140] These devices were not merely to be seen at random, but were explicitly referenced in minute-by-minute plans for the election-night program. [141] While the news itself could not be scripted, there were six pages of details about who would be on camera, when, and where. Instructions for the first few minutes called for the use of "gadgets for visualization," and there was a call to "pan floor showing gimmicks" at a point early on when there would be "few returns" to report.[142] With the passage of time, these devices and arrangements may now seem primitive. But they reveal a marked attention to the importance of visual appeal in the use of this new technology for transmitting election returns, a practice that had already evolved a great deal since 1932. In that year, an early television station operated by CBS in New York broadcast returns in a way that simply mimicked the long tradition of

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[138] Robert J. Wade, memo to A.W. Reibling, Subject: Life-NBC Election Returns, Oct. 15, 1948, Box 300, Folder 34, William Garden Papers, NBC Records, WHS.

[139] Sid James, "LIFE-NBC Visual Material,' memo, Oct. 28, 1948, Box 300, Folder 34, William Garden Papers, NBC Records, WHS. Note that "raze-ma-taze" appears in other pre-election materials as "razzmatazz" and is an apparent reference to items that are meant to dazzle. An Associated Press story on television broadcasters' plans reflected the belief that "it's the chart, the map, and the scoreboard that will set television apart in coverage of the election returns," serving as "visual devices and gimmicks" that would make it easy for viewers to keep track with "a minimum of mental arithmetic"; Associated Press, "Election Day Activities to Be Televised; Night-Long Programs Planned on Four Hookups November 2," *Hartford Courant*, Oct. 17, 1948, 15.

[140] James memo, Oct. 28, 1948, WHS.

[141] "Life-NBC Television -- Election Night," broadcast plan, Oct. 27, 1948, Box 115, Folder 32, Niles Trammell Papers, NBC Records, WHS.

[142] Ibid.

outdoor bulletins – training the camera's "electrical eye" on placards with lettered returns.[143] A newspaper account referred to the arrangement, in fact, as an "ethereal bulletin board."[144] Entertainers and pictures of candidates filled in the gaps between fresh news of the election.[145]

Times Square as Election Night Icon and Battleground

The inclusion in NBC's 1948 plans of a gadget bearing some similarity to the display of election-night news outside the Times Tower was probably not a random or lightly-considered idea. In the battle for attention on election night – in which broadcasting would eventually win an absolute victory over outdoor displays – that outcome was in no way guaranteed. But even beyond that, Times Square on election night occupied an enviable place not only in the physical landscape, but in the nation's mental landscape. While radio quickly commanded a larger audience, election night at Times Square continued to produce some of the very largest gatherings of people anywhere in the United States. This was a storied location that held a special place in the nation's psyche and figured prominently in broadcasters' conceptions of their own election-night performance. Even the notion of performance was not remote from the calculus that produced these crowds. Times Square's environs at Broadway and 42nd Street – the heart of the nation's most famous entertainment district – meant a ready supply of people. Just as the vaudeville of an earlier generation had made people in the

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[143] "Election Returns Radioed to World," *New York Times*, Nov. 9, 1932, 17.

[144] "All-Night Returns by Radio Planned," *New York Times*, Nov. 8, 1932, 15.

[145] "Election Returns Radioed to World," *New York Times*, Nov. 9, 1932, 17.

164

seats feel like they were part of the show, crowds in Times Square could count on being part of the show on election night.[146]

The *New York Times* did not take these crowds for granted. Although the newspaper operation had outgrown the Times Tower and moved a half block away to a new building in 1913, publisher Adolph S. Ochs held onto the original building for its public relations value.[147] Located at the southern end of Times Square, it had become an iconic structure in the heart of the brightly-lit entertainment capital of the nation, a location with impressive sightlines where Seventh Avenue and the "Great White Way" of Broadway converged. When the advent of radio and its virtual audience promised to dwarf the size of election-night gatherings in Times Square, the *Times* used election night in 1928 as a venue to roll out an attention-getting technological innovation in the delivery of news. Dubbed the "Motograph News Bulletin" and later known simply as the "zipper," the five-foot tall panel encircled the Times Tower at the fourth floor and featured moving messages with hundreds of letters and numbers spelled out in electric lights. [148] Stories following the election described its technical features in great detail, including 1,386,000 feet of wire, 88,000 soldered connections, and 14,800 light bulbs made of amber glass that was specially developed for this use, combining "warm,

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[146] The vaudeville description of audience inclusion is from Robert W. Snyder, "Vaudeville and the Transformation of Popular Culture," in *Times Square: Commerce and Culture at the Crossroads of the World*, William R. Taylor, ed. (Baltimore: Johns Hopkins University Press, 1996 [1991]), 143.

[147] Anthony Bianco, *Ghosts of 42nd Street: A History of America's Most Infamous Block* (New York: Harper Perennial, 2005), 26-27.

[148] "Thousands Watch Times Bulletins," *New York Times*, Nov. 7, 1928, 17; "Huge Times Sign Will Flash News; Electric Bulletin, Used for the Election, Will Be in Nightly Operation," *New York Times*, Nov. 8, 1928, 30. A decade after it was constructed, a retrospective of the Motograph News Bulletin referred to it as "the 'zipper in the Times Building.'" Milton Bracker, "History of a Decade Told By a Ribbon of Light," *New York Times Magazine*, Nov. 13, 1938, 12-13, 22. References to "the zipper" as the device's popular nickname include Michael Chabon, "1851; The First Issue: Imagining How a Newspaper Was Born," *New York Times*, Nov. 14, 2001, H1 ff.

pleasing color" and "unusual readability in early twilight."[149] There was a plug for the

inventor who installed the device.[150] And the *Times* celebrated the motograph's

"publication" of election returns as the debut of a nightly news service.[151] The moving

display of news would go on to be one of the most distinctive features of Times Square,

"printing" headlines for the "teeming midtown throng," as one writer put it a decade later,

"in the medium the crowd knows best – electric light."[152] But the motograph itself was

just one element in the *Times*'s varied presentation of the news on election night in 1928,

generations before the term "multimedia" would come to embody both the challenges and

opportunities facing traditional print journalism in the next century. Even as the *Times*

was enthusiastically reporting on nationwide efforts to broadcast the election's outcome

by radio, the paper continued to use searchlight signals, coded colored lights mounted on

a flag pole, stereopticon projections, and the "Pacent-Phonovox System" for announcing

the news to the crowd in Times Square.[153] For those listening to radio at home – such as

"Mr. Citizen," envisioned as having "drawn up before him a table with paper and figures"

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[149] Thousands Watch Times Bulletins," *New York Times*, Nov. 7, 1928, 17; "Huge Times Sign Will Flash News; Electric Bulletin, Used for the Election, Will Be in Nightly Operation," *New York Times*, Nov. 8, 1928, 30

[150] While there had been earlier versions of electric signs with moving words, the construction of this one allowed for the constantly changing messages inherent in a news medium; Bracker, "History of a Decade Told By a Ribbon of Light," 12-13, 22.

[151] Two days after the election, the newspaper explained that "News of local, national and international interest will be flashed directly from the editorial rooms of THE TIMES to the bulletin board when it begins nightly operation, so that all in the neighborhood may read. The bulletins will be news of the world, as fast as telegraph, radio and cable bring the stories to the editorial rooms." The *Times* also noted, "The apparatus is not merely an electric sign but in one sense a newspaper as well, so the control room is also a news room and a composing room." "Huge Times Sign Will Flash News," *New York Times*, Nov. 8, 1928, 30

[152] Bracker, "History of a Decade Told By a Ribbon of Light," 12-13, 22.

[153] "Election Results to Be Signaled from Times Tower," *New York Times*, Nov. 6, 1928, 3; "Election Returns To Be Broadcast," *New York Times*, Oct. 17, 1928, 24; "Election Night Is Climax For Politics on the Radio," *New York Times*, Oct. 28, 1928, Sect. 10, 16; "Election Returns on Radio Over Nation-Wide Network," *New York Times*, Nov. 4, 1928, Section 10, 16; "Election Returns on Radio Tonight," *New York Times*, Nov. 6, 1928, 38; "100 Stations Radio Election Returns," *New York Times*, Nov. 7, 1928, 7.

– the *Times* had also published a half-page packed with election data back to 1916 and a

place to record the state-by-state vote.[154]

To be sure, radio might have more listeners and was being celebrated in *Times*

headlines as "The New Instrument of Democracy." [155] But Times Square, with its special

mix of glitzy non-print news media on election night, continued to draw crowds of

astonishing proportions – in the tens and hundreds of thousands – well into the era of

broadcasting.[156] It's not hard to understand why broadcasters would want in on that

Times Square action in the battle for election-night legitimacy. At first, getting in on the

action meant bringing Times Square to the rest of the nation.   In 1932, the "hubbub" of

Times Square was captured by radio microphones positioned in hotel windows above the

crowd.[157] In 1936, NBC sent radio announcer and news reporter Ben Grauer to Times

Square with the NBC Mobile Unit to describe the scene.[158]   Here was the new medium,

radio, achieving some sort of paradoxical authenticity as an election-night news source

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[154] The description of "Mr. Citizen" who would not have to stand downtown "perhaps in the rain or snow" appeared in a story on the radio coverage plans: "Election Night Is Climax For Politics on the Radio," *New York Times*, Oct. 28, 1928, Sect. 10, 16. The data and tabulation sheet appeared as "Vital Statistics in the Vote in Last Three Presidential Elections," *New York Times*, Nov. 4, 1928, Sect. 10, 3.

[155] R. L. Duffus, "Our Radio Battle for the Presidency; The New Instrument of Democracy Has Brought the Candidates Into the Home, Enabled Them to Reach All of the People, and Radically Changed the Traditional Form of Political Appeal," *New York Times*, Oct. 29, 1928, Sect. 10, 1.

[156] See, for example: "Times Sq. Is Packed By Election Crowd; Throng Watching Bulletins So Jammed People Can't Raise Horns to Lips," *New York Times*, Nov. 5, 1924, 6; "Huge Night Crowds Flock Into Streets; Times Square Holds Largest Throng, 150,000 Being Drawn There by Election Interest," *New York Times*, Nov. 7, 1928, 16; "Great Throngs in Times Square Take the Election Result Quietly," *New York Times*, Nov. 9, 1932, 8; Meyer Berger, "Roosevelt Crowd in Times Square Quiet, Very Young, Middle-Aged; Throng of 250,000 to 500,000 Strains Lines of Police Detail—Lights on Almost Full Strength in Early Evening," *New York Times*, Nov. 8, 1944, 7. In 1936, when Franklin Roosevelt won reelection in a landslide, *New York Times* reported a "crowd estimated by police at 'a million' persons"; "Election Crowd in a Merry Mood," Nov. 4, 1936, 5.

[157] "Election Returns Radioed to World," *New York Times*, Nov. 9, 1932, 17.

[158] "Transcript of Press-Radio Election Results and Special Election Broadcasts as Presented Over NBC--Red Network, Tuesday, Nov. 3, 1936," Box 49, Folder 10, Central Files, NBC Records, WHS.

by capturing the excitement of the crowd getting its bulletins the old-fashioned way –

packed shoulder-to-shoulder in the street. A few minutes after NBC radio began

reporting that President Roosevelt was widely viewed as the victor with just a fraction of

the vote counted – as evidenced by concessions from newspapers in the Republican camp

– Grauer stood atop what he described as a "steel island … in a sea of humanity" and

created a picture in words and sound for his listeners:

> [A]s you can probably gather from the background of noise and
> excitement, it seems as if bedlam has broken loose here...
>   The street is absolutely choked with people, 10,000, 20,000, 50,000,
> 100,000, I don't think that is too extravagant an estimate, as I look up
> Broadway from my position at 43rd Street to 48th and 49th Streets, and I
> see that the streets are black with people… [The] horns you hear are going
> by the dozens all around us… There are constantly cheering, applauding
> people waving hats… and those who aren't tall are jumping on the
> shoulders of those who are taller…
>   … The reason for all this noise is that a picture of Franklin D.
> Roosevelt has just been flashed on the screen…
>   … Looking up, I see a searchlight swinging in a long and low semi-
> circle in the heavens, indicating election results. Then beyond this, I can
> look into the skies and see floating down myriad pieces of paper that have
> been thrown from the windows in the nearby offices…
>   There you have a picture, as hectic as it may be, yet an accurate one of
> the excitement in a humanity jammed Times Square in the heart of New
> York City on election night, brought to you by short wave from the N.B.C.
> Mobile Unit.[159]

Even as it would convey the scene in Times Square, NBC was trying to draw a

street crowd to its own enormous outdoor display. Thirty feet wide by 30 feet tall, the

display featured a map of the United States, each state represented with colored glass

capable of flashing amber light for Landon or green for Roosevelt. About an hour and a

half after the report from Times Square, there was a report from NBC's mobile unit on

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[159] "Transcript of Press-Radio Election Results… Nov. 3, 1936," NBC Records, WHS. Grauer was
becoming adept at live, on-the-scene radio news coverage in this era, according his oral history: Ben
Grauer, "Radio Pioneers Project," transcript of an oral history interview conducted by Erik Barnouw, Oral
History Research Office, Columbia University, 1970, 16ff.

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the scene around the NBC display, where nearly all states were now flashing Roosevelt's

green from coast to coast. As interesting as it was reported it to be, the 8,000 to 10,000

who stood watching were admitted to be "not as vast a crowd as we brought to you from

Times Square."[160]

Whether officials at NBC were explicitly trying in 1936 to outdo Times Square is

not made clear in the transcript. But internal NBC documents leave no doubt that's just

what the network and its parent company, RCA, hoped to do in 1948.[161] It was not

enough that NBC's combined radio and television audience would have dwarfed any

crowd which could turn up in Times Square. The broadcasters wanted to be at center

stage in the street, too. This, perhaps, promised visible proof of the network's election-

night importance.

The idea of drawing street crowds to watch NBC television monitors surfaced by

the early fall of 1948 in a memo between two officials at *Life* magazine, which had

collaborated with NBC in coverage of the 1948 political conventions and would do so

again on election night.[162] In an effort to gin up a discussion of election-night

programming, Sidney L. James, a senior editor, wrote to *Life* publisher Andrew Heiskell

with ideas for the broadcast.[163] Among those ideas was a change of scene to come 15

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[160] "Transcript of Press-Radio Election Results and Special Election Broadcasts as Presented Over NBC--Red Network, Tuesday, Nov. 3, 1936," pp. 32-33.

[161] Charles R. Denny, memo to S.N. Strotz, Oct. 13, 1948, Box 115, Folder 32, Niles Trammell Papers, NBC Records, WHS. Also: F.A. Wankel, Asst. Director, Television Engineering Operations [NBC], letter to J. Guetter, Rockefeller Center, Oct. 26, 1948, Box 115, Folder 32, Niles Trammell Papers, NBC Records, WHS.

[162] James to Heiskell, Sept. 24, 1948, WHS.

[163] James to Heiskell, Sept. 24, 1948, WHS. The relative roles of James and Heiskell at *Life* magazine comes from Reuven Frank's account of the 1948 convention coverage: Reuven Frank, "1948: Live … From Philadelphia . . . It's the National Conventions," *New York Times Sunday Magazine*, April 17, 1988, 36ff.

minutes after launching the broadcast in Rockefeller Center's Studio 8-H: "We continue to establish election night atmosphere with our mobile unit which is planted on the street below in Radio City. Here before two large television screens, crowds are gathered to watch the LIFE-NBC telecast."[164]

Three weeks later, without referencing the *Life* memo, the idea of a drawing a street crowd for NBC turned up in a memo from Charles R. Denny, NBC's executive vice president and general manager.[165] This idea was attributed to Robert Sarnoff, who worked at NBC and was the son of David Sarnoff, board chairman of NBC's parent corporation, RCA. The idea was also said to have the blessing of NBC President Niles Trammell. And it was nothing less than a declaration of war on Times Square's preeminent position as the nation's symbolic gathering place on election night. Using technological novelty as a draw – not just television, but big-screen outdoor television – was part of the plan:

> Bob Sarnoff has come up with an idea which Mr. Trammell and I think is excellent. He suggests that we arrange to have a big screen projection television set up in Rockefeller Plaza on Election Night so that the crowds can gather outside in and around the skating rink and in the Plaza to see the televising of election returns. The whole idea is to take the play away from Times Square. During the course of the big screen demonstration in Rockefeller Plaza, we would of course turn the camera out the window and make a pickup of the crowd and the big screen demonstration and put it on the television network.[166]

Less than two weeks later, with the election rapidly approaching, precise plans had been drawn up and arrangements were underway to carry them out. These included

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[164] James to Heiskell, Sept. 24, 1948, WHS.

[165] Charles R. Denny, memo to Mr. S. N. Strotz, Oct. 13, 1948, Box 115, Folder 32, Niles Trammell Papers, NBC Records, WHS.

[166] Ibid.

specifications for construction of a screen and frame with outside dimensions of precisely 17 feet-3 inches by 21 feet-11½ inches, sitting nine feet above the sidewalk and receiving images from a 2,200-pound projector operating 40 feet away.[167] It would, indeed, be completed in time for the election, and *New York Times* reporter Meyer Berger would take note, referring to the events in Rockefeller Plaza as "the new trend in Election Night customs."[168]

CBS, too, offered intentionally reflexive coverage on election night – that is, reporting on the excitement of its own efforts to report the election. CBS radio sent a reporter, Norman Brokenshire, out into the crowded streets of the Midtown Manhattan in a mobile unit. He came on air shortly before 6:30 p.m., and his report quickly turned to a description of his own reporting as the center of attention on the streets:

> We're certainly doing the town tonight. You know, this is nothing but a great big, beautiful Plexiglas bubble. And it's on wheels…Here along the sidewalks of New York, the pulse of America beats right out loud. It's a good thing we're moving, for the minute we come to a stop, this ultramodern mobile studio gets more attention from the men and women on the streets than the skaters in the plaza or the blimp that flies overhead.[169]

A CBS release from late October – found in the files of an NBC executive – also promised that the television broadcast would capture the "gala mood of the Great White Way," the storied section of Broadway that includes Times Square.[170] While there is no

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[167] F. A. Wankel, Asst. Director, Television Engineering Operations [NBC], letter to J. Guetter, Rockefeller Center, Oct. 26, 1948, Box 115, Folder 32, Niles Trammell Papers, NBC Records, WHS.

[168] Meyer Berger, "Election Night Crowd in Times Sq. Is Thin, Silent and Without Spirit; Some Observers Attribute Decline From Old Days of Teeming Throngs Alive With Noise to Lure of Radio, Television in Home," *New York Times*, Nov 3, 1948, 16.

[169] Election preview, radio recording, CBS News, Nov. 2, 1948, from the collection of A.R. Hogan.

[170] "Election Night on CBS Radio and Television," Oct. 21, 1948, Box 309, Folder 2, Francis C. McCall Papers, NBC Records, WHS.

mention of trying to draw a street crowd to CBS, the advance publicity made it clear that

CBS intended to generate visual excitement using its own newsroom. Three cameras

would be "sweeping the vast arena of activity" in the CBS election-night "nerve

center."[171] They would capture the "tally boards in operation" as well as "interviews with

celebrities and political personalities" – all part of the plan to show "exciting scenes of

the broadcasters at work." [172]

Despite the networks' enthusiasm for creating a journalistically sound and

visually exciting experience for their audiences, one important viewer found the

experience disappointing. He was Jack Gould, television critic for the *New York Times*.

In his estimation, "radio had much the best of it over television, the video art fumbling

rather badly in its first full-dress effort to cover the outcome of a presidential election."[173]

Gould suggested that while counting ballots might not be inherently exciting as a visual

affair, television could have done better with more effective preparation. Large wall

charts were hard to read, needing to be simplified and presented in larger letters. Too

much attention was drawn to the on-air broadcasters rather than the news to be reported.

On one network the presentation was pretentious. On another there was "altogether too

much 'experting.'"[174] And in missing the concession speech of the Republican candidate,

New York Gov. Thomas E. Dewey, Gould wrote that "whatever their alibis, the

television boys were caught napping."[175]

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[171] Ibid.

[172] Ibid.

[173] Jack Gould, "Programs in Review: Radio and Television Cover the Election – DuMont Inaugurates Daytime Video," *New York Times*, Nov. 7, 1948, sect. 2, 11.

[174] Ibid.

[175] Ibid.

For Gould, it would seem, some of the classic values of election-night reporting that we have seen in play over the prior decades – including effort to dazzle with various attention-getting gimmicks and a self-conscious attention to the story of the story – had interfered with at least the purported role of a news operation: transmitting the results of the election in an intelligent and comprehensible way. To be sure, by 1948 the television broadcasting of election returns had come a long way from the early attempts. But when the curtain closed on the last presidential election before 1952, the jury was still out on whether television could prove itself a respectable venue for election-night reporting.

Election-Night "Sublime"

This tour of election-night journalism during the century or so leading up to 1952 is not meant in to be exhaustive. Rather, it is intended to help answer a question. If computer analysis as a tool to aid in news reporting was slow to be widely adopted during the early decades of the computer age, how do we explain the use of computers as tools for election-night reporting on television in 1952? While it is tempting to view that episode as entirely revolutionary, the approach here has been to look for ways in which this use of computing might also be consistent with well-established journalistic practices on election nights to that point.

In our tour, the evident linkage between election night and the wonders of technology also calls to mind the work of David Nye, who has explored in detail over two centuries the "American technological sublime."[176] In Nye's usage, the awe-inspiring wonders of technology have been an important and durable American trope. Their

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[176] See David E. Nye, *American Technological Sublime* (Cambridge, MA: The MIT Press, 1994).

celebration has been intertwined with celebrations of such holidays as Independence Day, and the debuts of new technologies and systems have drawn crowds and tourists.[177] As this chapter suggests, election nights also have a place among the events in which Americans have mixed celebrations of technology and democracy, brought about by the intersecting agendas of journalists and their technological collaborators.

The ultimate wonder on election night may be the spectacle of mass action – starting with the election itself, democracy's main event. We may tend to take this for granted now. But with so few democracies elsewhere during much of the history of the United States, and with perpetually deep and strident conflict in the run-up to the voting, the wonder may have been that elections spanning a city or a continent could take place at all. This was not lost on reporters of the election-night scene for that century up to 1952. The language of the sublime weaves in and out of their descriptions of the crowd itself. In 1860, there was the writer for *The New York Herald*, in trying to convey the "spectacle" of the "living mass," asserting that "it must be witnessed to be fairly understood."[178] In 1896, there was the writer for the *New York Tribune*, describing the street scene as a "sublime spectacle" that called to mind poets descriptions of "the sea in its might" and Milton's rendition of the "gigantic splendors of hell."[179] Photographs of the election-night crowds outside one paper or another conveyed the same sort of impression – what a 1920 caption in the *St. Louis Post-Dispatch* called the "immense

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[177] Ibid., xiv, 41-43.

[178] "The Finale; The Scene Around The Herald Office," *The New York Herald*, Nov. 7, 1860, 3.

[179] "The Spectacle," *New York Tribune*, Nov. 4, 1896, 4.

throngs."[180] Or consider NBC's Ben Grauer, dispatched in a mobile unit to report by radio from Times Square on election night in 1936. He found "excitement," "bedlam," a "humanity jammed" place, "choked with people." [181] Here was wonder suffused with a hint of terror, challenging one's ability to adequately capture the scene in words, all elements of the sublime that inform his report. Unlike newspaper reporters recounting such scenes in the past, Grauer was in a location away from the network studio. But he was, in effect, an extension of the studio, and as young men climbed all over his mobile unit, he told the radio audience, "The mob is absolutely terrific. There is no other word to express it."[182]

What we have here, then, might be called the "sublime of the crowd" – and, as manifest on election night, perhaps, the "American democratic sublime." The story on election night, as much as it is about the victory of one side over the other, is about mass action. When crowds gathered outside newspapers to wait for returns, they became the visible manifestation of this mass action. When they turned to radio and then television, they did not disappear. Some, in fact, were still gathering outside and could be heard or shown. Some were invited into the studio and became part of the action there. Most of the crowd was at home. They numbered, eventually, in the tens of millions, a crowd both imagined and unimaginable. And in telling the story of the story of election night, journalists made a habit of positioning themselves at ground zero in the act of assembling these crowds – whether newspaper writers of the 19th century or broadcasters of the 20th.

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[180] "Immense Throngs In 12th Street and Auditoriums Get Post-Dispatch Election Bulletins," *St. Louis Post-Dispatch*, Nov. 3, 1920, 29.

[181] "Transcript of Press-Radio Election Results … Nov. 3, 1936," NBC Records, WHS.

[182] Ibid.

These real and virtual assemblies would become, in fact, elements of what might be called an "election-night sublime," election after election.

Still, for any one purveyor of election-night news, there was no guarantee of an audience. It had to be attracted and held. The dissemination of returns was suffused with entertainment values. And yet the stakes were high in being right – and being early – so that sound methods for being able to do both were critical. Technologies of all sorts – the ones for getting the job done and the ones for attracting attention, often one and the same – would find a perpetually important place in the election-night mix.

Chapter 4: Setting the Stage for Election Night 1952

Election night 1952 would bring together two worlds – the world of people who produced computers and the world of people who produced television news. This, of course, is an oversimplification. Neither world existed in isolation. Each world was itself a collection of people and organizations with both convergent and divergent interests and needs. And other worlds were part of the election-night picture, too. Among them were the dominant news media of print and radio, a host of actors on the political stage, the news-consuming public, and pollsters who tied all of them together in reports on public attitudes toward office holders and office seekers. But there is much to gain from seeing this episode as a coming together of the nascent commercial computer industry and the nascent enterprise of television news. Viewed both in retrospect and from a contemporary perspective, each was at a pivot point in its history. We can now see, looking back, that each would go on to become a defining presence in American culture. But at the time, much was uncertain and little was fixed. The players in both television news and commercial computing were seeking to be taken seriously in the society around them. And within each of these worlds – the world of computer makers and the world of news broadcasters – there were battles for supremacy.

On the night of Nov. 4, 1952, various configurations of news organizations and technology companies would join forces, forming journalist-technologist alliances that would compete with each other. Each group certainly faced potential setbacks should things go poorly. But they rolled the dice anyway and engaged in live, on-air experiments that offered both peril and promise. The preparation for those experiments

would be colored by fresh memories of election-night gaffs in 1948 on the part of pollsters, pundits, and news organizations. The intersection of computing and journalism in a high-stress run-up to election night in 1952, then, offers a window into the overlapping interests and various forms of competition and collaboration at work in the environment surrounding the early uses of the computer in journalism.

A High-Stakes Election

One could argue, in retrospect, that the most significant event of election night 1952 was not the culmination of a contest for president but the sentinel coupling of computers and the mass media. In the fall of 1952, however, the focus was on politics. And while the presidency was the most high-profile race, there was a rich array of other political offices and ballot questions to be decided. They intersected with hot-button issues – race, war, taxes, corruption, and Communism – and they contributed, in turn, both to an intense interest in the fall elections and to a lack of certainty about who would be moving into the White House in January.[1]

Maine held most of its elections in September, including balloting for governor, a U.S. Senate seat, and three seats in the House of Representatives. A traditionally Republican state, Maine remained in the Republican column.[2] This did little to help predict the way the rest of the country would vote in November. In the Senate, where Democrats narrowly outnumbered Republicans by 49 to 47, there would be 34 seats up

[1] Details here about the races and electorate are from the following sources: "Facts About the Electorate: How the Potential Voters Divide," *New York Times*, Nov. 1, 1952, E6; Leo Egan, "Good Weather Due; Each Side Claims Victory but Poll-Takers See Close Fight Likely," *New York Times*, Nov. 4, 1952, 1, 21.

[2] John H. Fenton, "Payne and Cross Elected in Maine; Republicans Named Senator, Governor, but Margins May Be Less Than in 1948," *New York Times*, Sept. 9, 1952, 1.

for grabs on election day besides the contest already decided in Maine.[3]   In the House,

where Democrats also outnumbered Republicans – by 230 to 200 – there were 432 seats

to be divvied up on election day. And voters in 29 states would be picking governors on

Nov. 4.[4]

The balloting at the state, county, and local levels would encompass not only all

manner of other elected offices, but also decisions on more than 200 proposed

constitutional amendments and other measures in 37 states.[5]   Some of these attracted

national attention and became tricky issues for the candidates, especially in matters of

race and civil rights. South Carolina's system of free public schools for all children

would be in jeopardy under a proposed amendment to the state constitution. The measure

was intended to bypass any future order from the U.S. Supreme Court banning school

segregation. Proponents included the state's governor, James F. Byrnes, a Democrat who

was backing the Republican candidate for President. Race was behind a contentious

ballot question in Mississippi, too. A proposed amendment to that state's constitution

would make voting rights contingent on literacy and on a prospective voter's ability to

interpret of any section of the U.S. and Mississippi constitutions. The measure's

opponents alleged it would be used to interfere with voting by blacks.[6] In California,

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[3] Among the contested Senate seats was one held by Massachusetts Republican Henry Cabot Lodge, facing a challenge from a rising star, Rep. John F. Kennedy. Lodge was chairman of Eisenhower's presidential campaign.

[4] These numbers do not include the contests already decided in Maine. In all, the fall elections featured 35 Senate contests, 435 House contests, and 30 gubernatorial contests.

[5] United Press, "Voting at 18 Fails; Loyalty Oaths Adopted," *Washington Post*, Washington, D.C., Nov. 6, 1952, 3.

[6] United Press, "Mississippi Set All-Time Record in Election Votes," *Delta Democrat-Times*, Greenville, Miss., Nov. 11, 1952; United Press, "Voting at 18 Fails; Loyalty Oaths Adopted," *Washington Post*, Nov. 6, 1952, 3; "Hidden Meanings," *Delta Democrat-Times*, Greenville, Miss., Oct. 26, 1952.

Communist sympathizers were the target of a measure that would require loyalty oaths of a half million public officials and employees.[7]

Even the race for president was not without a large cast of characters who appeared on the ballot in various states. In addition to the dominant Democratic and Republican parties, a variety of minor parties nominated candidates. These were dubbed "serious, sinister or silly" by *Time* magazine.[8] There were nominees from the Socialist Party, the Socialist Workers Party, and the Industrial Government Party, operating in some states as the Socialist Labor Party. The candidate of the Progressive Party, Vincent Hallinan, a well-heeled, Harvard-educated lawyer who favored cooperation with Russia, was serving a prison sentence for contempt of court at the time of his nomination. He and his running mate, Charlotta Bass, the former publisher of an African-American newspaper, were also the candidates of the American Labor Party in New York and the People's Party in Connecticut. Three fringe parties each nominated the same military icon without his consent – General of the Army Douglas MacArthur. These were the Christian Nationalist, Constitution, and America First parties. The Prohibition Party also tried to sign up Gen. MacArthur as its candidate. When he declined, the party nominated

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[7] United Press, "Voting at 18 Fails; Loyalty Oaths Adopted," *Washington Post*, Nov. 6, 1952, 3.

[8] Sources for the third-party candidates include: Alvin Shuster, "Minor Parties Run 12 for Presidency; Their Few Votes May Swing Close State Races and Even, Conceivably, the Election," *New York Times*, Nov. 3, 1952, 21; "It's A Free Country," *Time*, Sept. 1, 1952; Associated Press, "Many Candidates Seek Election As U.S. President," *Arizona Daily Sun*, Flagstaff, Nov. 4, 1952, 1, 8; "Irked by Ike? Against Adlai? Choose Another, Many Are Running," *Wall Street Journal*, Nov. 3, 1952, 1; "The 1952 Presidential Campaign," Dwight D. Eisenhower Presidential Library and Museum, http://www.eisenhower.archives.gov/Quick_links/1952_campaign/1952_campaign_fact_sheet.html; "Hamblen, Carl Stuart," *The Handbook of Texas Online,* University of Texas at Austin and the Texas State Historical Association, http://www.tsha.utexas.edu/handbook/online/articles/HH/fhafq.html; "Progressives Ratify Convict For President," *Chicago Daily Tribune*, July 6, 1952, 2; "Hallinan Choice of Labor Party," *New York Times*, Aug. 29, 1952, 10; and Election Coverage, part 2, NBC Radio, Script and Recording Library, NBC Records, WHS. In addition to the candidates listed here, at least one major-party candidate – Stevenson – was also the choice of a minor party candidate, nominated by the Liberal Party in New York; Albert Clark, "Stevenson Named by Liberal Party As Its Candidate," *Wall Street Journal*, Aug. 29, 1952, 3.

Carl Stuart Hamblen, a country-western and gospel singer, actor, and host of "Cowboy Church of the Air." On election night, an NBC radio commentator said of Hamblin that he "had a bout with the booze habit and came out the winner."[9] The Greenback Party, its name harking back to an earlier era, was represented by a Seattle grocer. The Vegetarian Party had a candidate, but not the one whom the party most wanted. Its first choice, a retired brigadier general, ran instead as the candidate of the American Rally Party. A New Jersey pig farmer was the standard bearer of the Poor Man's Party. The Church of God Bible Party fielded a candidate, as did the American Party. The Washington Peace Party had the season's only female candidate for president, an astrologist who claimed to be in touch with George Washington.

None of these minor-party candidates had a chance to win, and none was expected to draw the kind of numbers that some minor party candidates had garnered in the past. As recently as 1948, some 39 electoral votes in the South had gone to one such presidential candidate, Sen. Strom Thurmond, leader of a group of disaffected Southern Democrats. A story in the *New York Times* on the day before the 1952 election didn't rule out the possibility of a scenario of that sort – a minor candidate siphoning off just enough votes in a state here or there to alter the outcome of a tight race between Eisenhower and Stevenson, thus affecting the election at large.[10] But this was a long shot.

At center stage in the fall campaign of 1952 were Eisenhower and Stevenson, together with their running mates, both of whom were U.S. Senators: Richard M. Nixon,

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[9] Election Coverage, part 2, NBC Radio, NBC Records, WHS.

[10] Shuster, "Minor Parties Run 12 for Presidency."

a Republican from California, and John J. Sparkman, a Democrat from Alabama. This was the first time in a generation – since 1928 – that neither a sitting president nor a sitting vice president was running in the general election. But there was a sitting president bogged down in an unpopular war, and this did not help his party. Republicans were hoping to get back into the White House after two decades of Democratic occupancy, first by Franklin Delano Roosevelt and then, after his death in office, by his successor, Vice President Harry S. Truman. The Republicans were also hoping to break the Democratic majorities in the House and Senate.   Of about 98 million Americans of voting age, some 75 million were registered to vote.[11]   Women slightly outnumbered men in the ranks of potential voters – with the differential most pronounced in the cities and in the East.   Non-white voters, as they were called, represented just 10 percent of the pool, but their numbers had been shifting out of the South and into the North and West. The farm population continued to shrink, and by 1952 it accounted for less than one in eight potential voters. But voters could be parsed in all sorts of other large and small ways besides the easy-to-spot demographics. War, communism, scandals, civil rights, pocketbook issues, and parochial affairs would factor into divisive stands, charges, and counter charges in what began a contest between two men widely perceived as high-brow candidates.

By the time election day rolled around, the Associated Press would summarize the campaign season this way:

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[11] The demographics come from a pre-election story, "Facts About the Electorate: How the Potential Voters Divide," *New York Times*, Nov. 1, 1952, E6. The *Times*'s figures came from the U.S. Bureau of the Census and other government sources.

About all that is certain is this: the voters have had a chance to see, hear and read about the candidates as never before – in person, by radio and television, by newspapers, and by magazines.

They have heard – or had a chance to hear – the Republicans claim that the Democrats have bungled the Korean War, have condoned corruption, have been cozy with the Communists, and have been responsible for higher prices.

They have heard – or had a chance to hear – the Democrats claim the nation's economy is safer in their hands, that the GOP is cozy with big business and forgets the working man, that the real test of the Republicans is not what they say but how they have voted in Congress these 20 years…

The campaign [,] which started out on a high plane, fell into the more familiar name-calling pattern as one taunting word led to a worse one. At the end, many were calling it one of the most vicious in memory. [12]

Television and politics became a potent mixture during the 1952 campaign. One of the most iconic events in the 20th century politics of scandal – Richard Nixon's infamous "Checkers Speech" – was aired in the run-up to the election.   Nixon had been facing allegations that money from donors went into a slush fund he used for personal expenses. He turned to television in his defense, an event widely seen as helping to establish the medium's place in the culture of American politics. During the same campaign season, political figures were making unprecedented use of television for advertising and the broadcasting of speeches and appearances.[13] Television journalists, meanwhile, were making unprecedented use of politics.

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[12] Arthur Edson, "55 Million Voters Due To Cast Ballots Today; No Favorite Picked Between Adlai, Ike," *Florence (S.C.) Morning News*, Nov. 4, 1952, 3.

[13] Erik Barnouw writes of the 1952 political contests, "Although radio still commanded a larger audience than television, television for the first time received the main attention of the campaigners." Erik Barnouw, *The Golden Web: A History of Broadcasting in the United States, Volume II -- 1933 to 1953* (New York: Oxford University Press, 1968), 298.

TV News in the Early 1950s: Seeking Respect … and Attention

Four years earlier, television had covered the 1948 election. But just a fraction of

one percent of U.S. households were equipped with television sets. The election-night

audience would be expanded – in light of the early TV-era custom of "guest viewing"

and "television visiting" by friends, family and neighbors, as well as by the TV watching

at bars and other public venues. But the television audience was dwarfed by those

following the returns on radio, which was found in tens of millions of homes.[14] The

technology of television was not entirely new then – experiments had been underway in

earnest since the 1920s, and regularly scheduled programming had commenced before

World War II. But television ownership and television broadcasting had both been

limited by the war and were still in their infancy in 1948.[15]   Even as sales of TV sets

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[14] Sterling and Kittross report that in 1948, there were radios in about 37.6 million households and 11 million cars – 94.2 percent of U.S. households and 33.1 percent of cars. By comparison, an estimated 172,000 households – 0.4 percent of all U.S. households – were equipped with television in that year; Sterling and Kittross, *Stay Tuned,* Table 6-A, 862, and Table 7-A, 864. Their sources were: NBC Corporate Planning data as reprinted annually in *Television Factbook";* National Association of Broadcasters; Electronic Industries Association. Other television histories vary in the estimates of the number of sets in use in this period. William Boddy (*Fifties Television: The Industry and Its Critics* (Chicago: University of Illinois Press, 1990), 47) cites a figure of 185,000 TV sets in December 1947. Reuven Frank (*Out of Thin Air: The Brief Wonderful Life of Network News* (New York: Simon & Schuster, 1991), 9) reports a larger number of television households in 1948 – 314,000 in June of that year in the cities with television reception – but he does not cite the source. *Broadcasting-Telecasting* reported that an election night survey by the C.E. Hooper rating service of the four major radio networks (NBC, CBS, ABC and Mutual) in 36 cities showed that between 8 and 11 p.m., 54.7 percent of radios were in use (which would suggest an audience easily measured in the tens of millions). In New York, Hooper found that 74.1 percent of television sets were in use between 9 and 11 p.m. "Radio and TV's Big Story; Election Coverage Sparkled," *Broadcasting-Telecasting*, Nov. 8, 1948, 23, 61. The habit of "guest viewing" of television in the early years was illustrated by a 1950 study conducted by a junior high school in Stamford, Conn. Of the 447 pupils surveyed, 223 reported having TV sets at home – but another 130 reported watching TV in their neighbors' homes. Jack Gould, "Pupils' Time Spent at TV Rivals Hours in Classes," *New York Times*, March 6, 1950, 1, 14. The term "television visiting" comes from Angus Campbell, Gerald Gurin, and Warren E. Miller, "Television and the Election," *Scientific American* 188, no. 5 (May, 1953), 46-48.

[15] Useful accounts of the state of television in general and television news in particular in the period up to the early 1950s include: Sig Mickelson, *The Decade that Shaped Television News: CBS in the 1950s* (Westport, Conn.: Praeger, 1998); Michael Anthony Russo, "CBS and the American Political Experience: A History of the CBS News Special Events and Election Units, 1852-1968" (Ph.D. diss., New York University, 1983); James L. Baughman, *Same Time, Same Station: Creating American Television, 1948-*

picked up in the late 1940s, a variety of issues, including broadcast signals that interfered

with each other, prompted a freeze on the licensing of new television stations in late

1948. The early 1950s would see an explosion in the diffusion of television – more

stations, more sets, more programming, and ever-larger networks. The first television

signal to be seen by audiences simultaneously from one end of the country to the other

would be broadcast in September 1951.[16] The freeze on new stations would be lifted in

April 1952.[17] And November 1952 would see the first coast-to-coast network broadcasts

of election returns. The ownership of television sets had grown markedly – to more than a

third of all households in 1952.[18] Still, the way this story turns out – with television

reaching more than 90 percent of households by the early 1960s and becoming a

1961 (Baltimore: The Johns Hopkins University Press, 2007); James L. Baughman, *The Republic of Mass Culture: Journalism, Filmmaking, and Broadcasting in America Since 1941*, 3rd. ed. (Baltimore: The Johns Hopkins University Press, 2006); Jack Gould, *Watching Television Come of Age: The New York Times Reviews*, edited by Lewis L. Gould (Austin: University of Texas Press, 2001); Lynn Spigel, *Make Room for TV: Television and the Family Ideal in Postwar America* (Chicago: The University of Chicago Press, 1992); Sterling and Kittross, *Stay Tuned;* William Boddy, *Fifties Television: The Industry and Its Critics* (Chicago: University of Illinois Press, 1990); Erik Barnouw, *Tube of Plenty: The Evolution of American Television*, 2nd rev. ed. (New York, Oxford University Press, 1990); Douglas Gomery, *A History of Broadcasting in the United States* (Malden, Mass.: Blackwell Publishing, 2008); Bliss, *Now the News;* Leo Bogart, *The Age of Television: A Study of Viewing Habits and the Impact of Television on American Life,* 3rd ed. (New York: Frederick Ungar Publishing Co., 1972); Reuven Frank, *Out of Thin Air: The Brief Wonderful Life of Network News* (New York: Simon & Schuster, 1991); David Schoenbrun, *On and Off the Air: An Informal History of CBS News* (New York: E. P. Dutton, 1989); David Weinstein, *The Forgotten Network: DuMont and the Birth of American Television* (Philadelphia: Temple University Press, 2004); Harry Castleman and Walter J. Podrazik, *Watching TV: Six Decades of American Television*, 2nd ed. (Syracuse, N.Y.: Syracuse University Press, 2003); *The First 50 Years of Broadcasting: The Running Story of the Fifth Estate*, by the editors of *Broadcasting* magazine (Broadcasting Publications Inc., 1982).

[16] The broadcast on Sept. 4, 1951, carried a speech by President Harry Truman from San Francisco at the opening of the Japanese Peace Treaty conference. Sig Mickelson, who at the time was in charge of CBS television news and public affairs, described this event as "television's first megaevent, which would make television, still in its infancy, a truly national institution," and as television's "Golden Spike," a reference to the event linking the nation coast-to-coast by rail in 1869. Mickelson provides an account in the chapter "Driving Television's Golden Spike" in *The Decade That Shaped Television News: CBS in the 1950s* (Westport, Conn.: Praeger, 1998), 33-41.

[17] Boddy, *Fifties Television*, 53.

[18] Sterling and Kittross, *Stay Tuned,* Table 7-A, 864-865. Figures reported by Sterling and Kittross for percentage of all households owning a television set include: 1948, 0.4 percent; 1950, 9 percent; 1952, 34.2 percent.

dominant medium in American culture – can only be seen in retrospect. To be sure, in

many communities with television, other venues for leisure took a hit – movie theaters,

sporting events, night clubs, bookstores, even libraries. Americans spent less time

listening to radio – and jukeboxes, too.[19] Still, for the parties involved in television in the

early 1950s, there were no guarantees – either about the future of their medium or about

their own place in it. Even C. E. Hooper, a leader in the business of measuring ratings of

the radio audience in the 1940s, saw limited potential for television broadcasting as late

as 1950, when he sold his national radio and television ratings service to competitor A. C.

Nielsen.[20]

One of the fixtures of the nascent world of television was intense competition

between the networks – especially between NBC and CBS – which carried over from

rivalries in radio broadcasting. NBC was owned by the Radio Corporation of America,

which had a dual interest in television as both a broadcaster and a manufacturer of TV

sets. NBC had the largest number of affiliated television stations.[21] In the early years of

television, NBC also had bragging rights to a majority of the programs with the highest

audience ratings. But it faced a fierce challenger in CBS, which overtook NBC in the

early 1950s for largest number of top-rated programs.[22] Farther back in ratings, reach,

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[19] Erik Barnouw, *Tube of Plenty,* 114. The daily listening time per household for radio was 4 minutes and 6 seconds in 1950, was down to 2 minutes and 12 seconds in 1955; Sterling and Kittross, *Stay Tuned,* Table 2-D, 834-835.

[20] Hugh Malcolm Beville Jr., *Audience Ratings: Radio, Television, Cable*, rev. student ed. (Hillsdale, NJ: Lawrence Erlbaum Associates, 1988), 62-64.

[21] In 1952, the NBC television network had 64 affiliated stations – 59 percent of all TV stations; in second place was CBS, with 31, and ABC had 15. There were 62 stations affiliated with DuMont, but most of these were with stations that had their primary affiliations with another network. A total of 108 stations were affiliated with one or more networks. Sterling and Kittross, *Stay Tuned,* Table 8-A, 867.

[22] Douglas Gomery reports that "NBC-TV began the 1950s with thirteen of the twenty highest-rated shows but fell behind CBS in 1952 and never successfully regained its position," and that CBS passed NBC in

status, and capital were ABC, which also had a radio network, and DuMont, which had none. The DuMont television network, founded by a pioneer in the manufacture of TV sets, would sign off for the last time in mid 1950s, evidence that not reaching the largest possible audience could have repercussions beyond the issue of bragging rights. Ratings were of intense interest to advertisers and thus, for the networks, a key to the prospects for financial success.

The threats faced by broadcasters did not just come from competition with each other. The airwaves were regulated by the government, and for broadcasters, fear of government regulation was not merely an exercise in the hypothetical. ABC itself was created as an independent network after NBC, which had two radio networks, was forced by the Federal Communication Commission and the U.S. Supreme Court to divest itself of one of them in 1943.[23] In the foreword to her biography of Edward R. Murrow, A. M. Sperber laid out a set of questions to frame her study, including one which was by no means unique to the legendary figure from radio and the early years of television: "How does a responsible broadcaster function in an industry caught between government licensing and the marketplace?"[24]

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television ratings in 1953. Douglas Gomery, "Talent Raids and Package Deals; NBC Loses Its Leadership in the 1950s," in *NBC: America's Network*, Michele Hilmes, ed., Michael Henry, photo ed. (Berkeley: University of California Press, 2007), 153, 156. Internal NBC records reporting on Nielsen ratings showed that during the 1950-51 television season (from September to June), NBC averaged between 13 and 14 (13.5) of the top 20 shows, CBS averaged 5.3, ABC 1.2, and DuMont zero. By the 1951-1952 season, NBC had dropped to an average of 11.2 and CBS has risen to 8.6. There are two readings for each month in that season, and for four of these periods, CBS and NBC were tied with 10 top shows apiece, including the last figure reported. Richard S. Paige, "Top Programs, '5—'51 and '51-'52," memo to Merritt Barnum, Oct. 3, 1952; Box 131, Folder 11, William F. Brooks Papers, NBC Records; WHS.

[23] Up to that point, NBC had a "Red" and a "Blue" network. The latter was sold in 1943 and became the American Broadcasting Company in 1945. Sterling and Kittross, *Stay Tuned*, 231-232, 259.

[24] A. M. Sperber, *Murrow: His Life and Times* (New York: Bantam Books, 1986), xii.

In addition to the very real possibility of aggravating powerful forces in the federal government, broadcasters also faced perpetual criticism from various self-appointed guardians of the nation's moral, cultural, and ideological well-being. Concerns about deleterious effects of television on home life and young people – voiced as early as the 1940s and heard forever after – prompted constant scrutiny of television programming, especially for dramas featuring crime and violence.[25] In 1951, a different sort of protest came from members of the National Association for the Advancement of Colored People, offended by negative stereotypes of blacks in the CBS television situation comedy *Amos 'n' Andy*.[26] A southern governor, meanwhile, complained about the "mixing and mingling of races" on other CBS television programs, including black men said to be dancing "in juxtaposition to scantily clad white females."[27] He deemed these practices at odds with southern segregation laws and suggested a firm response: pressure by southern newspapers on the television industry, action by southern Congressmen, and perhaps even a boycott of products made by sponsors of the non-

[25] Spigel, *Make Room for TV,* 45-60; Bogart, *The Age of Television,* 245-289.

[26] Melvin Patrick Ely, *The Adventures of Amos 'n' Andy: A Social History of an American Phenomenon* (New York: The Free Press, 1991), 213-237; Erik Barnouw, *The Golden Web: A History of Broadcasting in the United States, Volume II – 1933 to 1953* (New York: Oxford University Press, 1968), 297; Bob Pondillo, "Racial Discourse and Censorship on NBC-TV, 1948-1960," paper presented at the Association for Education in Journalism and Mass Communication, San Antonio, Texas, August 2005, http://list.msu.edu/cgi-bin/wa?A2=ind0602a&L=aejmc&P=14191; United States Commission on Civil Rights, *Window Dressing on the Set: Women and Minorities in Television* (Washington, D.C.: Government Printing Office, August 1977), 4-5, http://www.law.umaryland.edu/marshall/usccr/documents/cr12t23.pdf.

[27] The Associated Press and United Press carried stories about the complaints raised by Georgia Gov. Herman Talmadge in a signed statement printed in his weekly political newspaper, *The Statesman*. See: United Press, "Talmadge Raps TV Shows With No Segregation," *Corpus Christi (Tex.) Caller-Times*, Jan. 6, 1952, 13; Associated Press, "Talmadge Hits TV for Mixing Races; Charges Some National Shows Violate Spirit of the South's Segregation Laws," *New York Times*, Jan. 6, 1952, 59.

segregated shows. In mid 1952, a broadcasting trade magazine, *Sponsor*, declared public

relations to be television's "hottest problem."[28]

One response of the television industry to perpetual criticism, the desire for

greater respectability, and the fear of more government regulation was the adoption of a

"Television Code" that promoted self-regulation.[29] Internal memos at NBC also show

that the network armed itself with examples of programs that were primarily educational,

cultural or informational in nature, and others that included "integrated enlightenment

material."[30] The TV networks also positioned the broadcasting of news as an antidote to

critical scrutiny of all sorts, framing their journalistic operations as a public service.[31]

This was especially true for framing the coverage of political conventions and elections.[32]

In its 1952 annual report to stockholders, CBS recounted the company's radio and

television coverage of the conventions, campaign season, and election under sections

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[28] "TV's Hottest Problem: Public Relations," *Sponsor*, June 16, 1952, 27; cited by Boddy, *Fifties Television,* 102.

[29] Boddy, *Fifties Television,* 102; Matthew Murray, "Establishment of the U.S. Television Networks," in *The Television History Book*, Hilmes, Michele, ed., Jason Jacobs, assoc. ed. (London: The British Film Institute, 2003), 37.

[30] For example: Michael Dann, "Responsibility Report, April 1-April 30," memo to Sylvester L. Weaver Jr., May 14, 1952, Box 121, Folder 33, Sylvester L. Weaver Jr. Papers, NBC Records, WHS.

[31] For example, in a profile of CBS founder William S. Paley, Louis Menand writes: "The networks' commitment to news and other public-affairs programs … has historically been a function of their apprehension about government meddling: the higher the level of official concern in Washington about exploitative programming or monopolistic practices, the greater the number of shows devoted to enlightening the public." Louis Menand, "The Last Emperor: William S. Paley," in *American Studies* (New York: Farrar, Straus and Giroux, 2002), 120. Fred Friendly, who became president of CBS News in 1964, recalled Paley reacting in anger when, at Friendly's first network budget meeting, the president of CBS, James T. Aubrey, complained about the cost of news as a "drain" on the network's bottom line. Paley told Aubrey that "news and public affairs helped build CBS and everything we are today… Without it we might not be able to continue." Fred W. Friendly, *Due to Circumstances Beyond Our Control* (New York: Times Books, 1995 [1967]), 196.

[32] Baughman notes that during World War II, radio network leaders saw their investment in covering that conflict as a means of increasing approval of the networks and tamping down advocates of more regulation; Baughman, *Same Time, Same Station,* 23.

titled "Broadcasting in the Public Interest" and "Programming in the Public Interest."[33] On election night, NBC radio would open its coverage with a pledge to "render a public service of trust" in reporting the returns.[34] The corporate sponsors of network election broadcasts staked a similar claim to serving democracy. A 32-page guide to the NBC coverage of the conventions and elections was published "in the public interest" by Philco, a maker of television sets, radios, and other appliances that were touted in the printed guide and during the on-air radio and television reports.[35]

To be sure, the role of television news in American culture was on the rise. By the end of the 1952 campaign season, television received the highest score when Americans were surveyed about the medium that provided them with the most information – even though there were still well more than twice as many homes with radio sets as the number with television sets, and even larger circulation of daily newspapers.[36] Still, television

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[33] Columbia Broadcasting System, Inc., *1952 Annual Report to the Stockholders*, archived at the Library of American Broadcasting, College Park, Md.

[34] Merrill "Red" Mueller, in Election Coverage, part 1, NBC Radio, Nov. 4, 1952, Disc 45A, Script and Recording Library; NBC Records; WHS.

[35] *Official Philco Guide to the National Political Conventions and Presidential Elections, 1952* (Philco Corporation, 1952); Box 136, Folder 6, Office Files, NBC Records; WHS Philco's sponsorship of election coverage "in the public interest" was also a point made in the opening ad during NBC radio's election-returns program, just after 8 p.m.; Election Coverage, part 1, NBC Radio, Nov. 4, 1952, Script and Recording Library, NBC Records, WHS.

[36] In a major study out of the University of Michigan, a sample of 1,714 citizens of voting age ranked media as follows when asked which was most informative: television, 31 percent; radio, 27 percent; newspapers, 22 percent; magazines, 5 percent; more than one medium, 9 percent; and none of the four, 6 percent. The authors did not provide specific margins of error for these replies, but did note in their narrative that the sample had been selected "in such a way that there is only one chance in 20 that its representation of the country at large is in error by more than four percentage points." Campbell et al., "Television and the Election," 46-48. The authors pointed out that 53 percent of respondents watched television coverage of the campaign – more than owned television sets, a number they put at 40 percent. Sterling and Kittross (*Stay Tuned*, 862, 864) reported these figures for radio and television households in 1952: 42.8 million vs. 15.3 million. The editors of *Broadcasting* magazine put the 1952 figures at 44 million radio homes and 19 million television homes; in (*The First 50 Years of Broadcasting*, 109). Total weekday circulation for daily newspapers was about 54 million in 1950 and 56 million in 1955, according to *Editor and Publisher Yearbook* data cited by the Project for Excellence in Journalism, *The State of the News Media 2006: An Annual Report on American Journalism*, at

news faced its own battles for respect within the realms of broadcasting and journalism.

Little time on air was devoted to news.[37] Airing the news did not guarantee quality or an

audience, and it took a while for television news operations to move beyond the idea of

"radio with pictures" and develop practices that made the most of the medium. In the fall

of 1951, *New York Times* critic Jack Gould was commenting – in praise of *See it Now*, a

new television news program featuring Edward R. Murrow – about the way television to

that point had not been very successful as a news medium "on a day-to-day basis."[38]

Murrow himself gave a nod to the strangeness of the transition as a veteran radio

broadcaster who had not been eager to embrace television. At the debut of *See It Now*, he

declared: "This is an old team, trying to learn a new trade."[39] Television news of the era

was described by broadcast historian Erik Barnouw as "an unpromising child" – "the

schizophrenic offspring of the theater newsreel and the radio newscast … confused as to

its role and future course."[40] As late as 1954, a radio and television writer for the *New*

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http://www.stateofthemedia.org/2006/chartland.asp?id=172&ct=line&dir=&sort=&col1_box=1&col2_box
=1&col3_box=1&col4_box=1.

[37] Network television devoted 7 percent of its program time to news in 1952; by comparison, the
percentages devoted to other program categories were: variety shows, 31 percent; drama, 24 percent; quiz
shows, 12 percent; music, 8 percent; and other programs, 18 percent. Sterling and Kittross, *Stay Tuned,*
Table 5-C, 856-857.

[38] Jack Gould, "Video News Coverage; 'See It Now' Proves a Major Contribution," *New York Times*, Nov.
25, 1951, sec. 2, 11.

[39] Sperber writes: "From the opening seconds, it was clear that *See It Now* would be more than televised
newsreels or radio with pictures." In addition to simultaneous live shots showing both U.S. coasts and film
shot by CBS crews specifically for the dimensions of the television screen – such as compelling close-ups
of troops in Korea – the innovations included the set, with Murrow speaking from the television studio's
control room. Just 11 months earlier, Murrow's reticence about making the switch to television had been
expressed in a note to a CBS colleague who had decided to stay in radio. Murrow expressed "a fervent wish
for the year ahead: 'that neither one of us has to try to make a living in television.'" Sperber, *Murrow: His
Life and Times*, 350, 353-356.

[40] Erik Barnouw, *The Image Empire: A History of Broadcasting in the United States, Volume III -- From
1953* (New York: Oxford University Press, 1970),40. Broadcast historian Douglas Gomery describes
television news of that era as a "second-class citizen"; Gomery, *A History of Broadcasting in the United
States*, 124.

York Daily News, Ben Gross, was suggesting that that television might be okay for

covering planned events but was too ephemeral for most news – not as good as print, and

not even as good as radio for the reporting of spot news and ideas.[41] Television

executives, meanwhile, worried whether news was destined to be a money loser.[42] And

journalists from radio – which had won public respect as a powerful and important news

medium during World War II – worried in the late 1940s and early 1950s that making the

jump to television might be a poor career move.[43]

　　At the intersection of news, broadcasting, and politics in 1952, the managers and

reporters in television news were engaged in what Sig Mickelson, director of television

news and public affairs for CBS, called a "struggle for parity" with journalists from other

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[41] Ben Gross, *I Looked and Listened: Informal Recollections of Radio and TV* (New York: Random House, 1954), 285, 298-300.

[42] In an assessment of the state of television in June 1951, Jack Gould wrote: "As a means of disseminating information and education, television does not yet have its heart in its work. Since programs in these classifications seldom produce revenue, they are regarded by the broadcasters as of secondary importance, and often as a nuisance." Jack Gould, "What TV Is – And What It Might Be," *New York Times Magazine*, June 10, 1951, 18, 22-24. Reuven Frank, who would go on to become president of NBC News, wrote that in 1953, even when NBC founder David Sarnoff, the chairman of the network's parent company, expressed an interest in a airing a scoop – footage of offered to NBC of the last surviving Nazi leaders locked up in a German prison – "news was so little regarded by the people who really ran the network that Sarnoff's approval was barely enough to get the program produced and shown at all. It finally went on the air, on a Sunday afternoon, when it would interfere with nothing important"; Frank, *Out of Thin Air,* 80-82.

[43] Several radio journalists who did make the move to television at the time have described colleagues who were not ready to embrace the new medium for news. Walter` Cronkite, for example, wrote in his autobiography that at the time he was tapped to anchor the 1952 political convention coverage for CBS, "most of the best-known radio reporters were still contemptuous, to a degree at least, of this newfangled picture business"; Cronkite, *A Reporter's Life*, 177. Describing television coverage of the 1948 political conventions, Reuven Frank wrote: "At each network, the stars of radio news, all widely known to the public by name and voice, resisted assignment to the television coverage, though some did occasional duty, a few minutes each day, as a favor to some executive"; Frank, *Out of Thin Air,* 11. Sig Mickelson, head of CBS television news, wrote that "members of the famed CBS correspondent team … were largely restricted to radio, and some looked on television with disdain"; Mickelson, *The Decade that Shaped Television News,* 2. As for the status that radio news gained during the war, at least one survey reported that radio was seen as far outstripping all other media, including newspapers, in wartime public service; Baughman, *Same Time, Same Station,* 23.

media.[44] The presidential contest was a key venue. And a particularly important battle took place inside a movie theater in Abilene, Kansas, where Eisenhower held a press conference on June 5, the day after a speech announcing his candidacy for the Republican nomination for president. It was not customary at the time for television cameras to be admitted to such gatherings, and the more prestigious circle of print reporters leaned on the Eisenhower camp to keep up the practice. "To much of the printed press," Mickelson later observed, television "was an intruder with its roots in show business, not in journalism."[45] Just before the press conference was to begin, a CBS crew moved into position in theater and let it be known that they would not leave unless thrown out by force. Eisenhower consented to their staying.[46] Starting a month later, the so called "gavel-to-gavel" coverage of the political nominating conventions further enhanced the efforts of television news pioneers to be taken seriously.[47]

The November elections would offer another chance to shine. But it didn't take a long memory to also understand that there was peril involved, too. For starters, the *New York Times* influential television critic, Jack Gould, had panned television's election-

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[44] Mickelson, who wrote several books that described this period in the history of television news, used this term in *From Whistle Stop to Sound Bite,* 48-49, to describe the quest for equal status with print and other media in access to news events.

[45] Ibid., 52.

[46] Ibid., 49-52. Schoenbrun provides an additional first-person account in *On and Off the Air,* 86-92.

[47] Reuven Frank wrote: "The 1952 conventions made television a necessity in the American home and gave it respect and status. If nothing else, sales of television sets showed this to be true"; Frank, *Out of Thin Air,* 69. Scholars also noted the boost television got from convention coverage. In the journal *Sociology and Social Research* ("Television and the Conventions," vol. 37, no. 2 (November-December 1952), 115-121), Emory S. Bogardus, a prominent sociologist from the University of Southern California wrote: "Something happened in Chicago last July that has never happened anywhere before to the same degree. The members of the two political conventions became television conscious in a full-fledged way, not only during the respective conventions, but afterwards, when they returned to their homes and heard what the onlookers in these homes thought of the spectacles. Television moved forward appreciably at Chicago as a means of mass appraisal of the behavior of the representatives of the mass."

night broadcasts in 1948, writing of "the video art fumbling rather badly in its first full-dress effort to cover the outcome of a Presidential campaign."[48] He explained that, for one thing, "counting ballots is hardly a function which lends itself to much visual excitement."[49] And the attempts that were made to present the numbers to viewers fell flat:

> Probably the most distracting factor was the large charts on the boards used to tabulate the national returns. They were almost impossible to read over any period of time with comfort, it being much easier just to listen to the sound channel. Simplification of the tables, with the use of larger and more clearly pronounced figures, will be a "must" for the next election.[50]

There was an even more embarrassing problem for a variety of players on election night in 1948. The three leading pollsters of the day – Gallup, Roper, and Crossley – had forecast that incumbent President Harry Truman would be beaten by the Republican challenger, New York Gov. Thomas E. Dewey. The pollsters were wrong. The shortcomings of their predictions and methods were the subject first of news stories and then of close study by both pollsters and scholars, fearing the damage that might be done not only to the reputation of survey professionals but to social science research in general.[51] But the self-inflicted damage wasn't the only damage done by the pollsters'

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[48] Gould, "Programs in Review." Frank wrote of Gould that his "influence on how important people in television regarded their own work and that of each other has never been duplicated"; Frank, *Out of Thin Air,* 78. Gould's son, historian Lewis L. Gould, who edited a collection of his father's works, wrote that Jack Gould "and his main competitor, John Crosby of the *Tribune*, had a significant influence on what the leaders of television thought and did"; Jack Gould, *Watching Television Come of Age: The New York Times Reviews*, Lewis L. Gould, ed. (Austin: University of Texas Press, 2001), 11.

[49] Jack Gould, "Programs in Review."

[50] Ibid.

[51] An initial study commissioned by the Social Science Research Council was released in late December 1948, followed by an enhanced study published as a book in 1949. The seriousness of the inquiry can be measured both by the credentials of those involved – including academics from such schools as Princeton, Harvard, and Yale – and the role of the Carnegie Corporation and the Rockefeller Foundation in providing

194

errant – and early – predictions. These forecasts colored the expectations and the

reporting of journalists. One of the most iconic images in the history of American

presidential elections is the one of Truman beaming as he holds up a copy of the post-

election *Chicago Daily Tribune* with the famously faulty headline "Dewey Defeats

Truman."[52] The *New York Times* ran a post-mortem on its own erroneous pre-election

forecast – a mea culpa in which *Times* correspondents from each of the 48 states were

asked to explain what went wrong.[53] Many of them acknowledged having been

influenced by the very same polls or by local newspaper surveys.

The *Times* and other papers were not the only news organizations to be

humiliated. One of the best-known radio broadcasters of the day, NBC's H. V.

Kaltenborn, was among those who would be ridiculed – by no less a figure than Truman

himself – for hanging on too long on election night to the belief that Dewey would

emerge the victor.[54] The network also came in for a ribbing in Gould's *New York Times*

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funds. See: Frederick Mosteller, Herbert Hyman, Philip J. McCarthy, Eli S. Marks, and David B. Truman, *The Pre-Election Polls of 1948: Report to the Committee on Analysis of Pre-Election Polls and Forecasts* (New York: Social Science Research Council, 1949); "Poll Errors Laid to Poor Judgment," *New York Times*, Dec. 27, 1948, 23; Peter Odegard, review of *The Pre-Election Polls of 1948*, by Frederick Mosteller et. al., and *The Polls and Public Opinion*, by Norman C. Meier and Harold W. Saunders, *The American Political Science Review* 44, no. 2. (June 1950): 459-464.

[52] The *Chicago Tribune* has a copy of this photograph online: Tim Jones, "Dewey Defeats Truman," *Chicago Tribune,* http://www.chicagotribune.com/news/politics/chi-chicagodays-deweydefeats-story,0,6484067.story.

[53] Robert G. Whalen, "Our Forecast: What Went Wrong?" *New York Times*, Nov. 7, 1948, E4.

[54] Kaltenborn joked about it two years later in his autobiography: H.V. Kaltenborn, *Fifty Fabulous Years, 1900-1950* (New York: G. P. Putnam's Sons, 1950), 297:

> "What did I do to deserve this presidential tribute? Nothing very much. I just predicted loudly and emphatically to a vast radio audience on election night that it looked very much as though the delayed country vote would make Thomas E. Dewey our next president. Then, while celebrating his election as our thirty-third president of the United States at an Electoral College banquet, Harry S. Truman singled me out, and in a genial, laugh provoking speech, gave an excellent imitation of my voice, diction and comment on election eve. Such a rare distinction was hardly deserved. One might think I was the only one who predicted Mr. Truman's defeat."

review: "NBC seemed a little too disinclined to believe what the figures were saying

during the night, their implications in the earlier hours that Dewey would come through

safely hardly being models of impartiality."[55] Gould went on to observe that "of the

many, many people heard on radio on election night, there were two who sounded as

though it could hardly come to end soon enough. They were Dr. Gallup and Mr.

Roper."[56] As for the broadcasters, NBC was not alone in its failure to cover itself in glory

as far as identifying the big story of the night in a timely way. Edward Bliss Jr., then an

editor at CBS who went on later to write a notable history of broadcast news, described

what he witnessed that night. After Truman pulled ahead in the vote count – but with the

results still incomplete from several key states that were thought to be in the Dewey

column – "CBS called it a night and closed down." A fine breakfast was served for the

CBS staff, but they were unhappy. Edward R. Murrow protested, said Bliss, and John

Charles Daly, who was working then at CBS, later referred to the episode as "that

unpleasant night."[57]

On election night 1952, Murrow, Kaltenborn, and Daly would all be key figures

in the competing networks' television coverage, with Daly by then at ABC. Avoiding the

various embarrassments of 1948 would, undoubtedly, have been an important point of

reference for each, and for the other reporters, commentators, and planners of the

election-night broadcasts. It's not hard to imagine what the common agendas might have

been – getting attention, getting the numbers right, and providing them in a timely and

visually engaging way with an accurate assessment of their meaning. But it would be

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[55] Gould, "Programs in Review."

[56] Ibid.

[57] Bliss, *Now the News*, 215 and p. 493 n. 18-19.

wrong to assume that the memory of 1948 was destined to play out in 1952 as an

unadulterated aversion to any sort of risk. Reuven Frank, who would later become

president of NBC News, describes the period between 1948 and 1958 as a time when the

people involved in television news "stumbled along, devising ways of presenting news

and methods of using pictures as news that have become standard, accepted American

fare. All were arrived at by trial and error."[58] Sig Mickelson, the CBS television news

chief then, described the early 1950s as a period when "*innovation* and *imagination* were

watchwords in the newsroom."[59] At a time when the existing model for visual stories was

the newsreel on film, the whole idea of a television news story that was live – or could be

filmed, processed, and presented to viewers on a tight deadline – was itself an innovation.

A car battery was adapted for use as a power source for cameras in the field. On

occasion, film was hastily processed in a restroom or aboard an airplane.[60] Television

graphics had to be imagined and invented – or at least cobbled together in surprising

ways from items materials and equipment meant for other uses. In need of a way to

identify speakers on the television screen for viewers at home watching the Republican

National Convention from Chicago 1952, an enterprising young CBS producer-director,

Don Hewitt, arranged to buy the menu board from a nearby diner. It had a black

background that would not show up on screen and movable white letters. Hewitt, who

would later go on to create one of the most successful television news programs, *60

Minutes*, said of those early years that even though television news had achieved some

sophistication by the 1952 presidential campaign, "we were still feeling our way and

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[58] Frank, *Out of Thin Air,* 28.

[59] Mickelson, *The Decade That Shaped Television News, 53.* The italics in this passage are Mickelson's.

[60] Ibid., 51-59.

making it up as we went along."[61] Mickelson characterized the early history of television news as one of "gambling with untested techniques, of daring to defy convention and laws of probability, of flaunting established procedures."[62] And for election night in 1952, amidst promotion of all the things the network news operations would use to distinguish themselves – both human and mechanical – one kind of gadget, in particular, would be singled out for special mention. It was the "electronic brain," common lingo at the time for computers. As would be the case in the decades to follow, the computer was already being invested with a complex personality and multiple values and meanings. Its place in the world of science, business, and engineering was far from fixed, not to mention its place in journalism and the culture at large, and election night would be yet another venue for working this out.

Trotting out a new technology on election night did carry risks for the television news operations, and network news managers would have to wrestle with how to contain those risks. But using the new technology would address at least one imperative for this new venue for news, situated as it was inside a medium best known for entertainment and showmanship. When the computer came to Sig Mickelson's attention as a possible addition to the election-night gadgetry, he would see that it could satisfy a variety of needs at once for a television news operation. He recalled these years later in a memoir: beating the competition in identifying the next occupant of the White House, doing so with a tool that could be touted prominently in advance, grabbing the attention of the

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[61] Don Hewitt, *Tell Me a Story: Fifty Years and 60 Minutes in Television* (New York: PublicAffairs, 2001), 49-52.

[62] Mickelson, *The Decade that Shaped Television News*, xviii.

print media, and, if all went well, boosting audience ratings.[63] Driving these possibilities

was what Mickelson described as the "novelty value" of computers.[64] To most people,

these machines were invested with mystery. Mickelson had been among them: "I knew

just enough about computers," he wrote, "to know that they could perform mathematical

miracles."[65]

Computers for Sale: The Uncertain Future of a Nascent Industry

The intermittent publicity that surrounded computers in general before the fall of

1952 embodied a wide-ranging set of visions about the machines' future. During World

War II, in the early years of experimentation with the design of machines that would

come to be known as "computers," the demands of wartime secrecy limited what the

public might know about these inventions. With the end of the war, there was greater

freedom to circulate information and ideas. There were enthusiastic accounts from

scientists, mathematicians, and business leaders in the late 1940s and early 1950s about

the promise that computers held for advances in knowledge, productivity, and human

relations.[66] There were concerns, too, such as the ones given voice in Kurt Vonnegut's

first novel, *Player Piano*. Published in 1952, it painted a troubling picture of technology

managers teamed up with computers and running the world. But among the visions both

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[63] Mickelson, *From Whistle Stop to Sound Bite,*137-138.

[64] Ibid, 138.

[65] Ibid.

[66] See for example: T. R. Kennedy Jr., "Electronic Computer Flashes Answers, May Speed Engineering," *New York Times*, Feb. 15, 1946, 1; Robert K. Plumb, "Great Gains Seen In 'Brain' Machine; Mathematicians Discuss Techniques Involving the Electronic Computer," *New York Times*, Nov. 18, 1949, 30; Associated Press, "Electronic Computers; Sarnoff Says They Should be Available to Business Soon," *New York Times*, May 29, 1952, 33.

glorious and dark, the use of computers on election night was not the sort of thing that sprang to mind before 1952 when technologists and non-technologists alike pondered the future of these strange new devices.   That an election night became a way for computing to enter journalism and find itself at center stage before the American public was in no way preordained.[67]

This is not to say that practical ideas about uses for computers were constrained or limited. Behind the new machines that would come to play a role on election night in 1952 were inventors with fertile imaginations. In 1946, two pioneers of computing, John W. Mauchly and J. Presper Eckert Jr., decided to leave their positions at the University of Pennsylvania and set out on their own to create from scratch a new kind of business, one that would be focused exclusively on the manufacture and marketing electronic computers and related devices. This was a bold idea. Up to that point, there was no established "market" for computers – nor agreement that there would be much of a market – and the military was a critical source of funds for the development of these novel, expensive, and complicated machines. In the mid 1940s, Mauchly and Eckert

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[67] There are a great many works that address some aspect of the early history of computers, ranging from memoirs to thorough accounts assembled from secondary sources to detailed scholarship from primary sources. Useful overviews of the pre-history and development of the computer industry to the early 1950s include: Ceruzzi, *A History of Modern Computing*, 2nd ed.; Williams, *A History of Computing Technology,* 2nd ed.; Cortada, *Before the Computer;* Kidwell and Ceruzzi, *Landmarks in Digital Computing*; Campbell-Kelly and Aspray, *Computer;* Arthur L. Norberg, *Computers and Commerce: A Study of Technology and Management at Eckert-Mauchly Computer Company, Engineering Research Associates, and Remington Rand, 1946–1957* (Cambridge, Mass.: MIT Press, 2005); James W. Cortada, *The Computer in the United States: From Laboratory to Market, 1930 to 1960* (Armonk, N.Y.: M.E. Sharpe, 1993); James W. Cortada, *Information Technology as Business History: Issues in the History and Management of Computers* (Westport, Conn.: Greenwood Press, 1996); N. Metropolis, J. Howlett, and Gian-carlo Rota, eds., *A History of Computing in the Twentieth Century: A Collection of Essays* (New York: Academic Press, 1980); William Aspray, ed., *Computing Before Computers* (Ames, Iowa: Iowa State University Press, 1990); Raúl Rojas and Ulf Hashagen, eds., *The First Computers: History and Architecture* (Cambridge, Mass.: MIT Press, 2000); Stephen G. Nash, *A History of Scientific Computing* (New York: ACM Press, 1990); Nancy Stern, *From ENIAC to UNIVAC: An Appraisal of the Eckert-Mauchly Computers* (Bedford, Mass.: Digital Press, 1981); Stan Augarten, *Bit by Bit: An Illustrated History of Computers* (New York: Ticknor & Fields, 1984); Kenneth Flamm, *Creating the Computer: Government, Industry, and High Technology* (Washington, D.C.: The Brookings Institution, 1988).

worked together at the University of Pennsylvania on one such project they had proposed

to the Army – design and construction of ENIAC, short for Electronic Numerical

Integrator and Computer.[68] As ideas about computers were taking shape, the ENIAC was

a seminal machine in several ways. For one thing, it worked. It would be used after its

completion in 1945 to do calculations related to atomic and conventional weapons

projects for ENIAC's sponsor and eventual home base, the U.S. Army's Aberdeen

Proving Ground in Aberdeen, Maryland. ENIAC was also electronic, as opposed to

earlier computing machines that were "electromechanical." Constructed with about

18,000 vacuum tubes, weighing 30 tons, and built at a cost of nearly $500,000, the

ENIAC relied on the manipulation of pulses of electricity, not moving parts, to work with

the numbers it processed. It was digital, meaning that it processed data divided into

discrete units. It was "general-purpose," meaning that it could be used to solve a variety

of problems rather than being dedicated to do only one thing. And it could be

programmed: it could be supplied both with data and a sequence of actions to take with

the data. It had the capacity to compare numbers and, based on the result, to determine

automatically what steps to take next.

ENIAC would be hailed as the first working electronic, digital computer. But

even before ENIAC's construction was completed, its inventors and others recognized its

limitations. For one thing, programming the machine was a laborious affair, one that

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[68] Debate has raged for decades – including an epic court battle – over who should be given credit for inventing the computer, in general, and who should get credit for inventing the ENIAC. It is not my intent here to review that ground. It is simply worth noting here that Eckert and Mauchly proposed the ENIAC project and led the team that developed it. Overviews of the ENIAC project and its context include: Kidwell and Ceruzzi, *Landmarks in Digital Computing*, 63-66; Williams, *A History of Computing Technology*, 2nd ed., 266-283; Nancy Stern, *From ENIAC to UNIVAC: An Appraisal of the Eckert-Mauchly Computers* (Bedford, Mass.: Digital Press, 1981); Scott McCartney, *ENIAC: The Triumphs and Tragedies of the World's First Computer* (New York: Walker and Company, 1999).

involved connecting wires on removable "plugboards" in order to establish the sequence of steps to be run for any given problem. The improvement over this approach came to be known as the "stored program" concept. The sequence of steps would be entered into a computer's internal memory by any of a variety of inputs – metallic tape, punched cards, perforated paper tape, or even directly by keyboard. Such programs could be far more easily modified than before – and they could even be modified by the results of the calculations themselves.

The combination of these features – digital, general-purpose, electronic, and stored program – would ultimately gel as generally acknowledged elements of a "computer." While still at the university and even as ENIAC was under development, Eckert and Mauchly worked on the design of a pioneering stored-program computer, the EDVAC. But the EDVAC would not be completed by the time Eckert and Mauchly set off on their own, prompted to make the move in a dispute with the university over patent rights. They had in mind to develop their own computers for sale – faster, more advanced, more versatile, easier to use, and less expensive than the ENIAC – and more in keeping with the concepts embodied in the EDVAC, including the stored program.

One of the documents that survive from the period in which Eckert and Mauchly were preparing to strike out on their own is a typed, eight-page business plan. It was found among Eckert's papers and auctioned off at Christie's in 2005, purchased for $72,000 by one of the next generation's computer software pioneers, Mitch Kapor.[69] The

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[69] Marguerite Reardon, "Net History Buffs Find Bargains at Christie's," *CNET News*, Feb 23, 2005, http://news.cnet.com/Net-history-buffs-find-bargains-at-Christies/2100-1026_3-5587750.html. I examined the draft business plan – titled "Outline of Plans for Development of Electronic Computors," the latter word indicative of the lack of a fixed meaning or even spelling at that time – at Christie's in February 2005 ahead of the auction. A scan of the document was subsequently made available by Kapor to the Computer History Museum in Mountain View, Calif., and posted online at http://archive.computerhistory.org/resources/text/Eckert_Mauchly/EckertMauchly.BusinessPlan.1946.1026

draft does not foresee uses associated with journalism or politics, but what the document

does make clear is that the inventors were open to an extraordinary range of possible uses

in science, industrial research, business, and government. Among the potential users,

some – such as the "planning departments of large business firms" and "agencies having

voluminous files and records" – were not so far afield from the engaging in the kind of

information aggregation and analysis necessary on election night. The plan foresaw that

the development of "electronic calculation and control equipment" could have such

diverse applications as automatic navigation, musical instruments with electronic

components, and translation of artists' designs into patterns for knitting and weaving

machines.

The vision in this document also makes clear a willingness to take on the Goliaths

in the arena they envisioned entering – the manufacture of machines for complex

calculation, tabulation, and accounting. There are promises of dramatic advances over

existing equipment, the latter being machines that used punched cards for the storage and

analysis of information. At the time – in the era before commercial computers – IBM was

the leader in the punched-card machine arena, and applications for its equipment ranged

from work on the U.S. Census to the design of major weapons to the production of

actuarial tables for insurance companies. As Eckert and Mauchly made contacts and

interested a range of clients in contracts, they underestimated the time and cost involved

in turning their ideas into workable machines. There is no small irony that following the

articulation of their dreams in 1946, the realities of raising sufficient capital to finance

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60910.pdf. The provenance and background of the document are described in a volume coauthored by
Jeremy Norman, the collector who put the document up for auction at Christie's: Diana H. Hook and
Jeremy Norman, with contributions by Michael R. Williams, *Origins of Cyberspace: A Library on the
History of Computing, Networking and Telecommunications* (Novato, Calif.: historyofscience.com, 2002),
548-549.

their inventions would see their small firm acquired in 1950 by another major manufacturing company and IBM rival, Remington Rand. [70] Then in 1951, they made a splash with the first large-scale, stored-program commercial computer, the UNIVAC, when it was officially turned over to the U.S. Census – one of the potential customers, in fact, that had been envisioned five years earlier in the 1946 draft business plan.

Remington Rand and IBM had been rivals for more a generation before the development of computers. Remington Rand was a more diverse corporation – selling products ranging from electric razors to typewriters to adding machines. Where the two businesses competed was in machines to help businesses manage information – keeping track of accounts, issuing bills and paychecks, and organizing inventory, for example. Remington Rand had been ahead in that field earlier in the century, but IBM came on strong and overtook Remington Rand as the leader by the end of World War II.[71] With the UNIVAC, Remington Rand seemed to pull out in front in the computer competition by beating IBM to market with its high-speed, all-electronic, stored-program behemoth. But that alone was not going to automatically ensure business success.

UNIVAC and the Appeal of a Public Stage

In the early 1950s, rivals in the nascent world of commercial computers did not have any guarantees – or even a consensus within their ranks – that there would be a large and inevitable customer base for the inventions of their new breed of engineers.

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[70] In addition to accounts in general histories of computing in this era, useful histories of Eckert and Mauchly's commercial ventures include: Norberg, *Computers and Commerce;* Stern, *From ENIAC to UNIVAC;* Lukoff, *From Dits to Bits;* and JoAnne Yates, *Structuring the Information Age: Life Insurance and Technology in the Twentieth Century* (Baltimore: The Johns Hopkins University Press, 2005).

[71] Cortada, *Before the Computer,* 156.

Pioneers were aware that the clientele – and the potential uses – had to be manufactured right along with the devices. Ideas were exchanged both informally and at well-attended conferences that drew participants from across the country, including some who would come to play a role in election-night forecasting.[72] The customers who were foreseen and sought after in discussions of uses for new computers were typically institutions – government agencies, military contractors, large businesses, and academic research centers. It would be decades, in fact, before the general public would come to be seen as a potential market for computers, and it would be decades before computers would be reduced enough in size, price, and difficulty of use to make a market of individuals even thinkable. But in a pair of documents labeled "Company Confidential," John Mauchly laid out in the early 1950s a vision of the importance, nonetheless, of capturing the attention of the public at large. One of these documents was drafted in 1951 and the other in July 1952.[73]   They help us understand why, when the idea surfaced for using the

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[72] For the role of meetings and conferences in spreading and sharing ideas about computers, see David C. Mowery and Nathan Rosenberg, *Paths of Innovation: Technological Change in 20th-Century America* (New York: Cambridge University Press, 1998), 138-139. Accounts and lists of speakers and attendees from early computer conferences include of a number of individuals whose association with election-night forecasting in 1952 appear in this dissertation. Among these were: the 1949 Institute of Radio Engineers National Convention; the 1950 Rutgers Conference on Automatic Computing Machinery; the 1951 Joint American Institute of Electrical Engineers-Institute of Radio Engineers Computer Conference in Philadelphia; and a 1952 meeting of the Association for Computing Machinery in Pittsburgh. Sources: "1949 IRE National Convention Program," *Proceedings of the I.R.E.,* February 1949, 160-178; Rutgers Conference on Automatic Computing Machinery March 27, 28, 29, 1950, List of Registrants, Box 3:C:6, Folder 140, John W. Mauchly Papers, UP-RBML; *Review of the Electronic Digital Computers Joint AIEE-IRE Conference, Philadelphia, Pa, December 10-12, 1951,* (New York: American Institute of Electrical Engineers, 1952); and "Proceedings of the Association for Computing Machinery," May 2 and 3, 1952, Pittsburgh, Pa., Box 122, Computer Documents, NMAH.

[73] The two documents appear as 1955 reprints that include notes in parentheses and footnotes which were identified as having been added after the original memos were drafted. The documents – John W. Mauchly, "Company Confidential, Reprint of 'Are Computers Newsworthy?'" written in 1951 and revised in 1955, and "Company Confidential, Reprint of 'A Scientific Research Bureau is Needed," written July 19, 1952, and revised May 1955 – are in Box 5:B:28, Folder 383, John W. Mauchly Papers, UP-RBML. The term "Company Confidential" does appear in 1956 as the name of a typewritten newsletter of the Remington Rand Univac division of the Sperry Rand Corporation, successor to Remington Rand. A copy of at least one edition of this newsletter, dated November 1956, listed as vol. 1, no. 6, is included in Mauchly's papers in the same archive (Box 3:C:8, Folders 190-191). There is no indication whether there is any connection

UNIVAC on national television for reporting on election returns, this would make sense to someone such as Mauchly, despite the risks inherent in undertaking such a novel task live before an audience of millions.

In the 1951 document – which Mauchly titled "Are Computers Newsworthy?" – Mauchly started by taking note of a striking transformation.[74] Less than a decade earlier, he wrote, there had been skepticism about the prospect of developing an electronic computer, and that was followed by disbelief that such a device could have commercial applications. But now, Mauchly reported, there were more than a dozen large electronic computers in operation, plus "one hundred electronic computer projects in laboratories" and "hundreds of small electronic computers in commercial use," with "more than one million vacuum tubes operating in IBM units throughout the country."[75] Here he was clearly casting a wide net in his conception of a "computer" at a time when the meaning of that term was not fixed and referred not just to stored-program devices but also recently invented electronic calculating machines in the punched-card tradition. But his point was that novelty could no longer be taken for granted: "In view of this rapid change in the last decade," he wrote, "computers are no longer front-page news."[76] And yet, Mauchly suggested, "There is a kind of paradox here: although computers have become commonplace, they are still regarded with awe and wonder."[77] Computers were still an

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between Mauchly's "Company Confidential" documents and the "Company Confidential" newsletter, though the five items in the two-page newsletter are each just a paragraph in length – much shorter than Mauchly's documents.

[74] Mauchly, "Are Computers Newsworthy?" UP-RBML.

[75] Ibid.

[76] Ibid.

[77] Ibid.

"abstraction" to most people, who, he said, had "no real understanding as to what they are

good for and little appreciation of what they can really do." [78] He underlined the next

line, which was the wind up to his pitch: "Here is a real opportunity for a public relations

program to step in and bring computers down to earth." [79]

  The trick in attracting public attention, he argued, was to show the value of

computers to undertake tasks that ordinary people actually cared about. And he made a

prediction that would turn out to be prescient: "it is the application of computers to

problems affecting our daily life which will make news in the future – not the mere

existence of a computer having fantastic abilities." [80] But even within Remington Rand,

he complained, there were few people who really understood what the UNIVAC could

do. By describing their own company's computer in "magical terms," these insiders were

doing a disservice, inducing in listeners a "feeling of unreality." [81] As a result, he wrote,

"through a lack of education within the organization itself we are at present helping to

foster the very same attitude of mystery and awe which is displayed by the general public

toward devices of this sort." [82]

  Mauchly noted that at Remington Rand's chief rival, IBM, founder Thomas J.

Watson Sr. had succeeded in continuing to get attention for the company's Selective

Sequence Electronic Calculator – based on what the invention could accomplish, not on

its massive size. The "SSEC" had been placed in service in 1948 and showcased behind a

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[78] Ibid.

[79] Ibid.

[80] Ibid.

[81] Ibid.

[82] Ibid.

glass wall visible from the street in Manhattan, replete with flashing neon indicator lights that drew large crowds of pedestrians. By the time of Mauchly's "Are Computers Newsworthy?'" document in 1951, the device was already recognized as a technological dead end.[83] It was an electronic machine that could run a program, but a machine that also included older, slower electromechanical elements – as did the much smaller IBM electronic machines, including the many Card Programmed Electronic Calculators then in service. But Watson had dedicated the machine to the use of science, and its use as a prestige builder and public relations device was undeniable. While IBM had the jump on Remington Rand in publicity, Mauchly saw a golden opportunity for Remington Rand with UNIVAC, which had beaten IBM to market with the newer computer technology.[84] UNIVAC, Mauchly argued, was much more capable than any existing IBM equipment to attack, in particular, the one sophisticated problem Mauchly thought would be of greatest interest to the public. That problem was weather forecasting.

For Mauchly, these arguments were clearly being deployed in efforts to find an intersection of interests within his own company. He wanted Remington Rand to become fully engaged in a project close to his heart, one that he began researching in 1937 and one that helped propel him into a career inventing ever more powerful calculating and computing equipment. As he saw it, Remington Rand could become a fixture in the public imagination by doing something in which the public had an interest. He also held

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[83] Watson's son, Thomas J. Watson Jr., who would become IBM's president in January 1952, referred to the Selective Sequence Electronic Calculator as a "technological dinosaur," a "weird gigantic hybrid of electronic and mechanical parts, half modern computer and half punched-card machine"; Watson and Petre, *Father, Son & Co.,* 90. The development of the SSEC is described in Bashe et al., *IBM's Early Computers*, 47-58.

[84] Mauchly, "Are Computers Newsworthy?" UP-RBML.

out an alternate, more troubling prospect – that without undertaking this sort of work itself, Remington Rand stood to be upstaged, again, by IBM.[85]

Mauchly continued to develop and expand these themes in the second of the two documents labeled "Company Confidential," this one with a notation that it originally dated from July 19, 1952.[86] It was titled "A Scientific Research Bureau is Needed." He articulated more forcefully the value of appealing to ordinary people who did not themselves comprise a market for computers. Mauchly was proposing that Remington Rand create a Scientific Research Bureau akin to a similar enterprise launched by IBM. In addition to weather forecasting, he proposed that such a center could undertake research on the application of computers to something else of widespread interest to the public – cancer. This could be done, he wrote, by developing "efficient methods for the coordination of scientific information."[87] Like weather forecasting, the application of computers to information management had come to interest Mauchly personally, and there is evidence that the inventor was frustrated at the limitations of his role now inside a large corporation.[88] So again, with the 1952 document pushing for the creation of a

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[85] Ibid.

[86] Mauchly, "A Scientific Research Bureau is Needed," UP-RBML.

[87] Ibid.

[88] Evidence of Mauchly's difficulties inside Remington Rand appears in a file of personal notes in his papers at the University of Pennsylvania. There is a typed page labeled "CONFIDENTIAL" and identified in a typed notation at the top as "Copy of draft of letter composed in May, 1952, but never sent." It is addressed "Dear Mr. Rand," which, from the context, is Remington Rand head James H. Rand Jr. Although the document does not have the name of the author, the context makes clear that the writer is Mauchly. He notes that in the more than two years since Remington Rand bought the Eckert-Mauchly Computer Corporation, Mauchly and Rand had met several times but never for "earnest discussion," and that Mauchly's "situation at present very much requires your personal attention." He continues, "I am distinctly unhappy," and explains that his "usefulness" to the company "has not expanded but has become severely circumscribed." While asserting that the jobs he would "most like to tackle could be of immense benefit to Remington Rand," Mauchly complained, "At present, I am just punching an adding machine on a problem which deserves a UNIVAC. That isn't progress." Mauchly also suggested that if he could not be effectively

scientific research bureau, he was looking to align his own scientific interests with the

company's interest in prestige as a gateway to profits.[89]

Mauchly began this document by noting that Remington Rand still had a

competitive advantage while IBM was "struggling" to bring to market an electronic

computer as fast as the UNIVAC.[90] But that advantage was only useful with proper

promotion, and Mauchly was adamant that the time had come to develop the kind of

"reputation among laymen" that would come not from advertising but from deeds:

> We must aim our publicity at the public in general because our
> object is to expand the market until computers become as ordinary as
> telephone switchboards and bookkeeping machines. Everyone must know
> what they do, and take it for granted that certain types of jobs should be
> done by computers. At present, everyone has heard about electronic
> computing, but to the vast majority a computer is a bit of unreal magic, not
> a part of the workaday world. We need to bring computers down to earth,
> and this can be done by publicity which parades before the public a
> succession of cases in which computers have been used to get valuable
> practical results. When an executive hears his friends talk about a
> UNIVAC, not as a piece of magic, but as a commonplace tool which
> everyone knows has done this or that important job, he will think of the
> UNIVAC as a natural purchase – not as an experiment to be approached
> with utmost caution.[91]

Mauchly made no mention of using UNIVAC for election analysis – that would not

happen until later in 1952, providing just the sort of promotional possibilities he had

envisioned here. Three years after he wrote this document, Mauchly reprinted it in 1955,

and after the passage on the benefits of appealing to the general public, he added this

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used within the company, he would like to arrange to a "fair termination … without embarrassment to
Remington Rand." The document is in Box 3:C:6, Folder 140, John W. Mauchly Papers, UP-RBML.

[89] Mauchly, "A Scientific Research Bureau is Needed," UP-RBML.

[90] Ibid.

[91] Ibid.

parenthetical update: "UNIVAC has become a household word principally because of use on Election TV."[92]

In between that July 1952 document and election night a few months later, another opportunity for the kind of publicity Mauchly craved for UNIVAC was presented to him, and he grabbed it. The vehicle – a weekly prime-time science program on television – would turn into virtually free nationwide publicity for UNIVAC. He would use it to advance his agenda of demystifying the machine for a lay audience – albeit with a heavy dose of showmanship.

Mauchly's datebook for August 11, 1952, includes an entry reporting that he received a call from Lynn Poole, host of *The Johns Hopkins Science Review*, a half-hour television program that originated from WAAM in Baltimore on Monday nights.[93] The show aired at the same time in New York, Washington, Philadelphia, Chicago, and several other cities, and on subsequent dates in yet more cities – about two dozen in all, on stations affiliated with the DuMont network.[94] The science program had recently won one of the most coveted honors in broadcast journalism, a George Foster Peabody Award. It would go on to win another Peabody Award for its offerings in 1952.[95] And it had won

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[92] Ibid.

[93] John Mauchly, datebook, 1952, Box 3:D:2, John W. Mauchly Papers, UP-RBML.

[94] The show aired from 8:30 to 9 p.m. on Monday nights. The broadcast schedule for *The Johns Hopkins Science Review* is in Box 3:C:6, Folder 142, John W. Mauchly Papers, UP-RBML.

[95] Peabody Award Winners Archive, University of Georgia, Athens, Ga., http://www.peabody.uga.edu/winners/winners_book.php. The science review won Peabody Awards for 1950 and 1952.

high praise from the *New York Times*.[96] Poole wanted to do a show about computers, and Mauchly – who had earned his Ph.D. from Johns Hopkins – seized the opportunity.[97]

When the show was scheduled to air on Oct. 27, Remington Rand circulated a city-by-city list of stations to its sales offices, which were urged to show off the UNIVAC to their "prospects, customers and friends… Make it a prestige builder for you. Let it show your customers and prospects how far seeing … how advanced your Company is in offering the newest and best in Record Keeping and Accounting equipment."[98]

The show featuring Mauchly and UNIVAC was titled "Can Machines Think?" The title appeared on screen to dramatic, edgy music at the opening.[99] Host Lynn Poole appeared standing next to an anthropomorphic robot as a prop, its head a boxy affair that seemed to be made of riveted plates. It had blinking light bulbs for eyes, slowly turning gears for ears, cables coming out of its head. And it was juggling a ball. When Poole threw a switch, the eyes went dark, the juggling stopped, and three themes that would dominate the broadcast were in play. One was the idea that computers were not forces unto themselves, but were under human control. The second was the attempt, with various gadgets, to compare computer components to familiar mechanisms and activities

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[96] In assessment of the state of television in 1952, *Times* critic Jack Gould singled out the Johns Hopkins science program as one of the best educational shows, ably translating scientific complexities for a mass audience; Gould, "What TV Is – And What It Might Be," 18, 22-24.

[97] Mauchly could have come to the attention of the host of *The Johns Hopkins Science Review* in any number of ways, but two months earlier, the UNIVAC inventor had been featured in a *New York Times* "Science in Review" piece. The article reported on a talk Mauchly had given to the American Meteorological Society on the connection between solar activity and the weather; Waldemar Kaempffert, "Sun Does 'Make' Our Weather From Day to Day, According to Mathematician's Findings," *New York Times*, June 8, 1952, E11.

[98] "Teletogram," Remington Rand, Oct. 20, 1952, Box 3:C:6, Folder 142, John W. Mauchly Papers, UP-RBML.

[99] "Can Machines Think?" Lynn Poole, producer; original broadcast date Oct. 27, 1952; Johns Hopkins Television Programs, 1948-1960, Special Collections, Milton S. Eisenhower Library, (hereafter referred to as JHU-EL), The Johns Hopkins University, Baltimore, Md.

in order to explain how these machines worked. And the third was the almost irresistible urge to engage in showmanship. In one of his "Company Confidential" documents Mauchly might have dismissed the trope of magic as an appropriate frame for the computer, but he seemed to share the magician's delight in moments of wonder – even, in a paradoxical way, by reducing the computer's amazing feats to iterations of familiar acts. And juggling – a consummate sort of wondrous performance – appears again in the show with a human juggler, and then with Mauchly's suggestion that this action was akin to the way the UNIVAC stored digital information – by the constant cycling of acoustic waves of energy through tanks of mercury. Mauchly also used some specially constructed devices to demonstrate such computer features as the combination of units of information stored in a binary state – on or off, one or zero.

The show featured examples of computer use for science and business – ranging from predicting the results of nuclear reactions to aggregating census data. For another possible use, calculating how much of each type of currency a company needed on pay day, Mauchly gave an example with some simple math on a chalk board. The weather was mentioned briefly. And at the very end of the show, which had been prepared during the run-up to election-night, Poole called attention to UNIVAC's upcoming task: "It's being used in elections to find out what the results are and prognosticate as the results of these elections come in by the hour in election campaigns."[100]

After the show first aired on Oct. 27, a Remington Rand sales manager reported that it had generated "a considerable number of comments."[101] Poole received a letter of

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[100] "Can Machines Think?" JHU-EL.

[101] Luther Harr, Remington Rand, memo to John Mauchly, "UNIVAC; Johns Hopkins Television Show," Oct. 31, 1952; Box 3:C:11, Folder 240, John W. Mauchly Papers, UP-RBML. The memo is addressed from

praise from the representative of a New York architectural firm, who wanted to reach

Mauchly to "get his opinion of floor load requirements or current requirements these

machines might require in the 'Office of the Future.'"[102]   The U.S. Census, the first

UNIVAC customer, inquired about getting copies of the show.[103] *Variety*, an

entertainment industry publication, ran a review.[104] It concluded that although Mauchly's

attempts to explain the computer in simple terms were "overly technical and sketchy for

lay viewers," the episode "got across the wonderful achievement which such scientific

robots represent" and "underlined the importance of the human factor – the machine can

only do what men direct it to do."[105]

The cooperation of the UNIVAC camp with the Johns Hopkins science program

and with election-night planners at CBS was evidence of a belief among at least some at

Remington Rand that in the fall of 1952, there was a critical, competitive need to

generate as much positive publicity as possible for the nascent commercial computer

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Harr at the Washington, D.C., sales office. Harr is identified as UNIVAC sales manager in Washington in an oral history of Willis K. Drake (founder of Data Card Corporation and formerly of Remington Rand), conducted by James Ross, Feb. 3 and Feb. 23, 1983, CBI, http://special.lib.umn.edu/cbi/oh/pdf.phtml?id=107.

[102] Edward A. McCormick, letter to Lynn Poole, Oct. 30, 1952, Box 3:B:1, Folder 7, John W. Mauchly Papers, UP-RBML. Warren Wightman from the Office of the Director of Public Relations at The Johns Hopkins University also wrote to Mauchly that "Some very critical people here said they thought our show was excellent"; Warren Wightman, letter to John Mauchly, Nov. 4, 1952; Box 3:B:1, Folder 7, John W. Mauchly Papers, UP-RBML. Wightman is also listed in a finding aid for the collection of Johns Hopkins television programs as the assistant producer for "Can Machines Think?"; "Johns Hopkins Television Programs 1948-1960," Special Collections, The Milton S. Eisenhower Library, The Johns Hopkins University, http://www.library.jhu.edu/collections/specialcollections/jhuxmlkineFind.frame.html.

[103] John Mauchly, memo to A.N. Seares [Remington Rand], New York, "Kinescope of JHU TV Show for Census," Nov. 6, 1952; Box 3:C:11, Folder 240, John W. Mauchly Papers, UP-RBML. Mauchly made the argument inside Remington Rand that the company should acquire a copy of the show and provide it to the Census at no charge to the government as a return for the favor the Census granted in allowing some of the show's film footage to be shot there.

[104] "Tele Followup Comment," *Variety*, Oct. 29, 1952.

[105] Ibid.

operation. In memos back and forth, Mauchly and Al N. Seares, a key marketing figure at Remington Rand in New York, expressed frustration that there was not more awareness of this need and more effective use for that purpose of a magazine published by Remington Rand for circulation within the business community.[106] In a memo aimed at getting the attention of the magazine's editorial staff, Seares wrote that the Eckert-Mauchly division, "with their limited staff and facilities, were doing more along this line than we have done since they became a part of Remington Rand…"[107]

IBM and Competitors Large and Small

While IBM was lagging behind Remington Rand in getting its first true electronic, stored-program computer to market, it was already a key player in the evolution of advanced machinery for complex calculation. One of the precursors to IBM's move into commercial electronic computers was the Automatic Sequence Controlled Calculator – also known as the Mark I – which the company financed, constructed, and then installed at Harvard during World War II. The Mark I was the idea of a Harvard graduate student, Howard H. Aiken, who would become a professor there, head of the Harvard Computation Laboratory, and one of the biggest names in the early history of computing. His giant of a machine – 51 feet long and eight feet high – was not electronic, relying instead on electromechanical parts for its operation. And while it could

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[106] For example: Al N. Seares, memo to Arch Hancock and others, "Systems Magazine Editorial Policy," Oct. 8, 1952; and John W. Mauchly, memo to Al N. Seares, Arch Hancock and others, "Systems Magazine Editorial Policy," Oct. 8, 1952; both in Box 3:C:11, Folder 240, John W. Mauchly Papers, UP-RBML.

[107] Al N. Seares, memo to Arch Hancock and others, "Systems Magazine Editorial Policy," Oct. 8, 1952; Box 3:C:11, Folder 240, John W. Mauchly Papers, UP-RBML.

carry out a program, those instructions could not be stored internally.[108] The Selective

Sequence Electronic Calculator that IBM placed in service a few years later within view

of crowds on 57th Street was more advanced than the Mark I. But it, too, did not

represent the future of computing technology. And like the Mark I, it was a one-of-a-kind

machine. IBM's bread-and-butter business, on the other hand, was in machines that

could be produced in quantity.

In the fall of 1952, IBM was working intensely to bring out the first of its

commercial electronic, stored-program machines – the Defense Calculator, or the 701.

This was a computer, the company's first in the modern sense of the word, but it was not

given a name that included the word "computer." That term had not yet become

permanently attached to a machine of this sort, and Thomas Watson Sr. was said both to

have disliked giving the machine an anthropomorphic designation – "computer" referred

to a person before it referred to a machine – and to have wanted to distinguish IBM's

product from the Universal Automatic Computer, UNIVAC's full name.[109] But the first

of the IBM 701 models was not due to be completed and shipped for display at company

headquarters in Manhattan – to take the place of the dismantled Selective Sequence

Electronic Calculator – until after the election.[110]

Still, being behind Remington Rand in getting the newest computer into public

view did not mean IBM was behind in preparing the ground for a commercial computer

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[108] The history of the Mark I is recounted in a number of works. See, for example: I. Bernard Cohen, *Howard Aiken: Portrait of a Pioneer* (Cambridge, Mass.: The MIT Press, 2000 [1999]); Bashe et al., *IBM's Early Computers*, 26-33; a brief overview is provided in: Kidwell and Ceruzzi, *Landmarks in Digital* 56-57.

[109] Early avoidance of the term "computer" at IBM is discussed in various places, including Pugh, *Building IBM,* 142-143.

[110] Bashe et al., *IBM's Early Computers,* 161.

industry. IBM was the leader in the type of information processing that relied on older technology – electromechanical punched-card equipment – and after the war the company pioneered and became the leader in the application of electronics to that technology. IBM did this with a string of electronic calculators – the initial model, dubbed the 603, the one-ton 604, and the 605 – which could be set up to carry out a limited number of steps in sequence at speeds previously unheard-of for commercial machines. Thousands of IBM electronic calculators were eventually placed in service. And along the way IBM effected an enhancement by following the lead of one of its customers, linking together an electronic calculator and several other pieces of existing equipment to carry out longer programs from punched cards and plugboards and to make use of electromechanical storage units. These clusters of equipment – marketed as Card-Programmed Electronic Calculators, or CPCs – were being produced by the hundreds in the early 1950s while customers waited for more sophisticated devices to arrive.

The CPC was not a computer in the sense that word has come to mean, including the capacity for an internally-stored program capable of modifying itself as it runs. [111] But it carried out computer-like functions, and IBM historian Emerson W. Pugh has argued that CPCs were critical to laying the groundwork for IBM's leadership in

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[111] Works that describe the IBM Card-Programmed Electronic Calculator and discuss its place in the history of IBM and the development of the computing industry include: Bashe et al., *IBM's Early Computers*, 68-72; Pugh, *Building IBM*, 143, 152-155; Ceruzzi, *A History of Modern Computing*, 2nd ed. 18-20; Williams, *A History of Computing Technology,* 2nd ed., 251-253; Aspray, ed., *Computing Before Computers,* 244-246; John W. Sheldon and Liston Tatum, "The IBM Card-Programmed Electronic Calculator," in *Review of Electronic Digital Computers, Joint AIEE-IRE Computer Conference,* 30-36; Cuthburt C. Hurd, "The IBM Card-Programmed Electronic Calculator," in *Proceedings, Seminar on Scientific Computation, November, 1949*, editor-in-chief Cuthburt C. Hurd, edited by the IBM Applied Science Department (New York: International Business Machines Corporation, 1950), 37-41; Saul Rosen, "Electronic Computers: A Historical Survey," *Computing Surveys* 1, no. 1 (March 1969), 12-13; Frank da Cruz, "The IBM Card-Programmed Calculator," Columbia University Computing History, http://www.columbia.edu/acis/history/cpc.html; "Card Programmed Electronic Calculator, " IBM products description, IBM Corporate Archives, Somers, N.Y.; Cuthbert C. Hurd, "Computer Development at IBM," in *A History of Computing in the Twentieth Century,* Metropolis et al., 389-418.

commercial computing. This was not because they were a superior technology. They were not. But they were supporting IBM's massive customer base with equipment and experience in programming before the UNIVAC was completed – and then even afterwards at a time when only a relative handful of UNIVAC computers were in operation. Computer historian Paul Ceruzzi writes of this time that the CPC's "combination of program cards, plugboards and interconnecting cables was like the epicycles of a late iteration of Ptolemaic cosmology, while the Copernican system was already gaining acceptance."[112] But while it might have been a technological dead end, the CPC was available, it was affordable, and, he writes, "customers needing to solve difficult engineering problems … accepted it."[113]

These judgments were foreshadowed by an article about the new computer industry that appeared in *Fortune* magazine in January 1952. Titled "Office Robots," the article reflected the lack of a fixed definition at the time for the term "computer." [114] It featured photographs of the IBM 604 electronic calculator – not now considered to be a computer, but a device that the magazine described as the "first practical electronic business computer" – and the newer Remington Rand model 406-2, also an electronic calculator which *Fortune* referred to as that company's "first small-size business computer."[115] Some 900 of the IBM 604s were said to be in use, plus over 70 of the

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[112] Ceruzzi, *A History of Modern Computing,* 2nd ed., 20

[113] Ibid.

[114] "Office Robots," *Fortune*, January 1952, 82-87, 112, 114, 117-118.

[115] "Office Robots," 6. As noted elsewhere, after the era in which the idea of a computer and the associated terminology had solidified, the 604 is not generally seen as one. For example, a definitive history of the early years of IBM computing says of the IBM 604 that "it was not … a *computer* in the sense that word has acquired. It lacked the essential characteristic of a stored program…. In short it was a punched-card calculator in the EAM [electric accounting machine] tradition, with impressive new capabilities derived from the speed and flexibility of electronics"; Bashe et al, *IBM's Early Computers*, 62. The 604 (and later

218

CPCs. The article made clear that "to computer engineers, as well as to I.B.M. and Rem Rand, these machines are only a first approximation of the electronic business machines of the future," being "hobbled" by the speed limitations of using punched cards for input and output and "having no real memory organs in the high-speed computer sense."[116] Still, the piece noted, "they are serving to plow the field of actual commercial operation, explore the problems of application, and introduce management to the new language."[117] In April 1952, a publication of the Institute of Radio Engineers, which closely followed developments in a wide range of the electronics applications, also gave a nod to the transitional significance of the IBM 604 and CPC in a review of developments in electronic digital computing during the prior year. The review noted that, with the first UNIVAC being completed and tasked with work on the Census, the time had finally arrived for computer engineers "when their machines would begin to be applied to the management of certain industrial and governmental operations." [118] This, it was noted, had followed "a gradual building up to this event with the widespread business and governmental use of electronic calculators like the IBM 604 and CPC."[119]

While IBM and Remington Rand were deemed the clear leaders in the emerging computer field, the *Fortune* article noted that there was also a "battle of the robots"

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the 605) also served the computational element in the Card-Programmed Electronic Calculator, which the same authors describe as an "interim system" that "helped IBM significantly in the transition from accounting machines to computers"; Bashe et al, *IBM's Early Computers,* 72, 68.

[116] "Office Robots," 8.

[117] Ibid.

[118] "Radio Progress During 1951," *Proceedings of the I.R.E.* 40, no. 4 (April 1952), 430.

[119] Ibid.

underway.[120] By *Fortune's* count at the start of 1952, some 90 organizations were said to

be "working on some form of computer," ranging from large-scale, general-purpose,

electronic digital machines to special-purpose equipment designed for such particular

tasks as handling airline reservations or magazine subscriptions. Laboratories were said

to "hum and glitter with the look of another world." Of particular note were small-scale

computers being designed – and some already built – by companies that made calculating

machines and other sorts of office equipment and were jumping in to the fray in the

nascent industry of commercial computing. While giving up speed in return for reduced

size, the small-scale computers, noted *Fortune*, "begin to foreshadow the true office

robot."[121]

IBM was taking notice – and, in the top ranks, with concern. In the late 1940s,

word had made its way up through the chain of command about various engineering

conferences around the United States where electronic computing projects were

discussed.[122] Warnings were coming from customers, too, that the days of punched-card

technology were numbered.[123] Within the company, electronics were not uniformly seen

as the way forward. Thomas J. Watson Jr., son of the founder and then a high-ranking

company executive, wrote in his autobiography about the "built-in resistance to exploring

electronic computing."[124] The younger Watson himself admitted to not grasping at first

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[120] "Office Robots," 3-4. The annual review in the *Proceedings of the I.R.E* also noted, in reference to the proliferation of work on computers, that "As of this year, the time has passed when the well-informed general-purpose expert in this field could be expected to have a fairly good picture of every important projected large-scale computer that had been described in public."

[121] "Office Robots," 8.

[122] Watson and Petre, *Father, Son & Co.,* 194-5.

[123] Ibid., 195.

[124] Ibid., 198.

the promise of electronics after having gotten a look at ENIAC. The unanticipated level

of interest in IBM's first electronic calculators in the early post-war years helped him

understand what might lie ahead. But even as IBM focused on bringing out its first true

computer – big, powerful, and expensive – others were racing ahead in the area of

smaller and more affordable machines.

The engineering publications and conferences and the *Fortune* article were not the

only visible signs of this ferment. In May 1952, the Navy Mathematical Computing

Advisory Panel convened a symposium at the Pentagon with a title reflecting the rising

interest in smaller machines: "Commercially Available General-Purpose Electronic

Digital Computers of Moderate Price."[125] By one account, more than 250 people

attended, and the report's distribution list includes about that many names – from

government agencies, the military, universities, contractors, computing equipment

manufacturers, and other corporations.[126] In her preface to the report, Mina Rees, the

panel's chair and director of the Mathematical Sciences Division in the Office of Naval

Research, wrote:

> Until recently, all commercially available general purpose
> automatic digital computers were large and cost many hundreds of
> thousands of dollars. Within the past year, however, a number of
> manufacturers have developed smaller, more compact (usually slower)
> automatic computers for sale at less than one hundred thousand dollars.
> Nearly all of these smaller computers use magnetic-drum storage. With
> this drastic reduction in the cost, it has become possible for agencies with

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[125] *A Symposium on Commercially Available General-Purpose Electronic Digital Computers of Moderate Price*, sponsored by the Navy Mathematical Computing Advisory Panel (Washington, D.C.: Department of the Navy, Office of Naval Research, report distributed by the U.S. Department of Commerce, Office of Technical Services. May 14, 1952). This report is reproduced at http://ed-thelen.org/comp-hist/Computers-1952-hand.html; a paper copy of the report and the distribution list is available in Box 95, Computer Documents, NMAH.

[126] A review of the symposium report indicates that more than 250 persons attended; Howard Gammon, "Review: The Automatic Handling of Paper Work," *Public Administration Review* 14, no. 1 (Winter, 1954), 63-73.

modest budgets to consider acquiring such machines. Interested agencies, therefore, can evaluate the now available machines to determine which, if any, can best satisfy their scientific-computing or data-handling needs.

Accordingly, a symposium on "Commercially Available General-Purpose Electronic Digital Computers of Moderate Price" was arranged by the Naval Mathematical Computing Advisory Panel, and representatives of manufacturers of small computers were invited to meet with representatives of various government agencies in Washington.[127]

The symposium report included copies of the talks on seven small computers, along with photographs of the machines and diagrams of their operations. None of these computers were the work of IBM or Remington Rand – but representatives of both companies were on the distribution list and may well have attended.

The free-for-all that had a variety of firms taking aim at the hoped-for small-computer market was also not hard to miss in other ways. The September 1952 issue of *Scientific American*, for example, featured several stories about computing – and ads, too. The New York-based Electronic Computer Corporation ran an ad announcing the Elecom 110 – "A General Purpose Computer to meet all your Computing Needs," for $62,500.[128] Another firm, Computer Research Corporation of California, ran an add announcing "3 Important New Electronic Digital Computers," including a small general-purpose machine, the CADAC 102-A.[129] Versions of CADAC and Elecom machines had been featured at the Pentagon symposium on small computers. And the computer division of

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[127] *A Symposium on Commercially Available General-Purpose Electronic Digital Computers of Moderate Price*, ii, NMAH.

[128] "Announcing a General Purpose Digital Computer," advertisement for the Electronic Computer Corporation, *Scientific American* 187, no. 3 (September 1952), 123.

[129] "3 Important New Electronic Digital Computers," advertisement for the Computer Research Corporation of California, *Scientific American* 187, no. 3 (September 1952), 131.

Bendix Aviation Corporation ran an ad announcing the development of "Bendix Digital Computers," with more information to "be available shortly."[130]

IBM was itself not a single-minded entity but one in which a variety of camps struggled over the best way forward in the face of a variety of threats that had become clear by the fall of 1952.[131] On the one hand, the company would soon have on the market a computer to compete with the powerful and expensive UNIVAC for complex, high-speed computing jobs. But IBM was staring at a wave of competition for more standard business and scientific applications of interest to companies and government agencies that would not be willing to pay for such high-end equipment as either IBM's forthcoming 701 or the UNIVAC. This competition came from several directions. There was the threat of a new Remington Rand electronic calculator that would compete with IBM's electronic calculators. And there was the threat of the relatively small, moderately priced stored-program computers using magnetic drum technology.

The way forward for IBM was not clear and engendered what historians of IBM and its technology have termed a "chaotic period." [132] Some at the company favored incremental enhancement of existing technology. Others favored its abandonment. But there was no doubt that serious competitive threats required action. A memo from IBM's Future Demands Department described the fate that awaited the company if it did not move quickly beyond the Card-Programmed Electronic Calculator into the new technology of the stored-program computer – the latter referred to as a "sequence

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[130] "Bendix Digital Computers," advertisement for the Bendix Computer Division, Bendix Aviation Corporation, *Scientific American* 187, no. 3 (September 1952), 121.

[131] For a detailed account of this period, see Bashe et al., *IBM's Early Computers* (Cambridge, MA: The MIT Press, 1986).

[132] Bashe et al., *IBM's Early Computers*, 99.

calculator" owing to the company's preference at the time not to describe its computers as "computers":

> The CPC was developed to establish our position in the computing field, and to gain time for the development of a stored-program sequence calculator. However, card programming of computers has no permanent place in computing except as an incidental use of card accounting equipment already available for other purposes.
> Several competitive computers are already on the market at prices of $70,000 and $100,000 with which the CPC cannot compete in versatility, capacity, or speed. As a result the CPC must be recognized as competitively obsolete, no longer able to maintain our position, and incapable of being improved sufficiently to reestablish our leadership.[133]

To meet this challenge, proposals were on the table for different types of stored-program computers favored by different constituencies with the company. On Nov. 12, 1952, eight days after the election, a memo from IBM vice president John C. McPherson, the company's former director of engineering, called attention again to the dire consequences that would follow if the company did not meet the challenge of magnetic drum-based computers by bringing its own to market.[134] The technology underlying the IBM 604 and CPC was being rendered obsolete, as McPherson saw it, and the relatively low cost of the competitors' models also posed a threat to IBM's expected market share for one of its own planned computer models. A list he prepared, titled "Competitive Drum Computers," and dated Nov. 20, contained the names of seven such commercial

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[133] "IBM Calculator Program," report of the Future Demands Department, prepared by SWD [Stephen W. Dunwell], Sept. 30, 1952, Technical History Project, Book References, IBM's Early Computers, Chapters 3 & 4, Box 272, Folder: Footnotes 70-80, IBM Corporate Archives, Somers, NY. (This collection of documents is hereafter referred to as the Technical History Project at IBM-CA.) The initial resistance at IBM to using the term "computer" – a word that referred to a person who carried out calculations before it became permanently associated with a machine through the terminology employed by IBM competitors – is discussed at Emerson W. Pugh, *Building IBM: Shaping an Industry and its Technology* (Cambridge, Mass.: The MIT Press, 1995), 142-143.

[134] John C. McPherson, "Competitive Situation re Drum Calculators," memorandum, Nov. 12, 1952, Box 272, Chapters 3 & 4, Folder: Footnotes 70-80, Technical History Project, IBM-CA. For the dates of McPherson's positions at IBM, see the entry for "John C. McPherson" in J.A.N. Lee, *Computer Pioneers* (Los Alamitos, Calif.: IEEE Computer Society Press, 1995), 465-466.

machines and their manufacturers.[135] They included a "Drum Computer" from

Remington Rand, machines developed by Consolidated Engineering Corp. and Hogan

Laboratories, and several computers from names well known for calculating machines

and office equipment – Marchant, Underwood, National Cash Register, and Monroe.

Among the seven computers listed was the Monroe Calculating Machine Company's new

device, the Monrobot.

There is no reference in those memos to the Monrobot's role on election night.

But during this period, the lack of consensus about a way forward came before Thomas J.

Watson Jr., by then IBM's president, to resolve. At a meeting on Nov. 18, Watson

expressed his concern about the competitive threats, and one of the participants' notes on

the meeting reflect that there was "considerable discussion" of a magnetic drum machine

that had been in the works at IBM for some time.   Watson wanted to know "who or

what" was holding up that project. [136] Watson made it clear that he wanted to move

forward with the machine. IBM was then referring to it as the "MDC," or Magnetic Drum

Calculator. It had a target date 15 months away, to be followed by proposed completion

of two other models. Watson's decision would breathe new life into the MDC.[137] It would

hit the market in 1954 as the "650." Though not as sophisticated, powerful, or fast as

IBM's other computers, the 650 would be compared to Ford's Model-T – a mass-

produced machine intended for basic business applications that would outsell all

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[135] JCM [John C. McPherson], "Competitive Drum Computers," memorandum, Nov. 20. 1952, Box 272, Chapters 3 & 4, Folder: Footnotes 70-80, Technical History Project, IBM-CA.

[136] B. E. Phelps, "Notes on Meeting at Kenyon Laboratory," Nov. 18, 1952, Box 272, Chapters 3 & 4, Folder: Footnotes 81-90, 70-80, Technical History Project, IBM-CA. The context for this meeting is described in Bashe et al., *IBM's Early Computers*, 98-101.

[137] Bashe et al., *IBM's Early Computers*, 101, 165.

competing drum-based models and help move IBM into leadership of the market for commercial computers.[138]

All of that was in the future, and by no way guaranteed, in the fall of 1952. And the memos cited here do not reveal whether the Monrobot and the publicity surrounding its role in the election played any part in IBM's deliberations. It certainly was not the most robust of the drum computers. But it was one of a class of machines – smaller, more affordable, and less complicated than the room-sized giants – that would play a role as computer producers and consumers worked out, over time, what computers should be able to do, who should operate them, and how they should be applied. The competition was not merely between companies in the emerging computer marketplace, but between ideas about computing. And the Monrobot was based on a very particular idea that would be seen in play on election night – small enough to be trucked to Rockefeller Center and installed at NBC's election-night headquarters, and accessible enough that NBC would tout the ease with which it could be mastered and operated.

Monroe and the Monrobot

That the Monroe Calculating Machine Company would play a role in 1952 in helping introduce the American public to computers operating in real time – and in adding computers to the resources available for election-night news reporting – was not something in any way destined to happen. In fact, 15 years earlier, Monroe had passed up a chance to get in on what would turn out to be one of the important developments in the evolution of modern computing. That was when, in 1937, Howard Aiken at Harvard had

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[138] Bashe et al., *IBM's Early Computers,* 165-172; Ceruzzi, *A History of Modern Computing*, 2nd ed., 43-44; Cortada, Information *Technology as Business History,* 67.

his idea for a large-scale electromechanical machine that would carry out lengthy and complex calculations in an automatically controlled sequence of steps – that is, by following a program. Aiken took the idea to George C. Chase, an inventor and Monroe's director of research. Chase, in turn, took this idea to the management at Monroe, hoping to enlist his company in Aiken's plan. But after mulling over it over for several months, according to Aiken, Monroe's management decided not to get involved. Aiken went to IBM instead, and IBM ultimately provided financial support and built Aiken's machine, the Harvard Mark I. [139] Its home base upon completion, the Harvard Computation Laboratory, would become both a landmark in the history of computing and a place at which other pioneers in that world would get their start.

In the late 1940s, as the contours of a commercial computing market were beginning to take shape – especially with the work of Eckert and Mauchly as they set about designing and building the UNIVAC – Aiken heard that Monroe had become interested in the idea of constructing a small computer. He passed this information on to William H. Burkhart, who was then completing an undergraduate degree in mathematics at Harvard. Burkhart was also working in Aiken's computation lab, contributing to a

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[139] A history of Aiken and Chase's interactions and efforts to interest Monroe in Aiken's ideas appears in Cohen, *Howard Aiken, 39-44.* Sources for that account include an oral history with Aiken and an account written by Chase. The former is online as: Howard Aiken, oral history, interviewed by Henry Tropp and I.B. Cohen, Feb. 26-27, 1973, Computer Oral History Collection, 1968-1973, 1977; Archives Center, NMAH, http://invention.smithsonian.org/downloads/fa_cohc_tr_aike73027.pdf. Cohen indicated that he had a booklet written by Chase with a history of calculating methods and machines. In addition, in the records of the Monroe Calculating Machine Company archives at its successor, Monroe Systems for Business, Levittown, Pa., I came across the text of a speech Chase gave to the American Society of Tool Engineers on March 10, 1953. It is titled "History of Mechanical Computing Machinery," and it included a slide show. The last two of 60 slides are listed as images of Aiken and the Mark I, and his text includes a description of meeting with Aiken on April 23, 1937, and hearing about Aiken's idea for what became the Mark I. After eventually seeing the Mark I, wrote Chase, he knew that a new era in the "development of computing machinery" was "well underway." Chase is also listed as having given a talk with the same title at the opening banquet of the Spring meeting of the Association for Computing Machinery, May 2, 1952, held at the Mellon Institute, Pittsburgh, Pa.; "News," *Mathematical Tables and Other Aids to Computation* 6, no. 39 (July 1952), 186-190.

volume then being prepared on the theory and design of electronic computing and control circuits. Burkhart wrote to Monroe, expressing interest in working on the project mentioned by Aiken.[140] Burkhart's own vision, he made clear, was that a small computer such as Monroe might be interested in building – he called it "a small digital calculator with provision for storage and sequencing"– was precisely what he would be producing himself if he had the resources.[141] Burkhart is representative in some ways of those in the late 1940s and early 1950s who had a vision for computers that varied from the period's predominant image of machines that filled entire rooms, worked at lightning speed, and required highly trained experts to operate. In his letter to Monroe, he explained that he had a "well-founded suspicion that large-scale machines are inefficient when initial cost and total number of operation and maintenance personnel are considered."[142] He would get the job at Monroe, and by the time of the 1952 presidential campaign, he would have already applied for a number of patents for computer components and played a lead role in the design and development of the Monrobot computer featured on election night. He would even get some nationwide publicity in that role by name, finding himself quoted as

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[140] In the letter, Burkhart referenced his conversation with Aiken, which he said took place "upon returning from the I.R.E. meeting in New York last March"; William H. Burkhart to Director of Research, Monroe Calculating Machine Company, letter, July 31, 1949, William H. Burkhart papers, courtesy of Dorothy Burkhart. The letter also explains Aiken's role in making the connection between Aiken and Monroe. The volume on which Burkhart was working when he left Harvard in 1949 was later published as: *Synthesis of Electronic Computing and Control Circuits*, by the Staff of the Computation Laboratory, The Annals of the Computation Laboratory of Harvard University XXVII (Cambridge, Mass.: Harvard University Press, 1951). In the preface, Aiken noted that he worked with Burkhart and fellow student Theodore Kalin on sections on "control-circuit theory" before Burkhart left in August 1949 to join Monroe. Also listed as a member of the staff working on the project was An Wang, who went on to found Wang Laboratories, notable as a manufacturer of computers and early word processors.

[141] Burkhart letter to Monroe, July 31, 1949.

[142] Ibid.

the Monrobot's "manager" in a post-election edition of *Newsweek* – a memento he saved for the rest of his life.[143]

Burkhart himself was an unlikely person, in some ways, to have ended up in that position. Hailing from rural Honesdale in northeast Pennsylvania, he would recall decades later that he loved learning on his own about math and physics but didn't care about grades, and that, as a result, his high school record was not the best. His recollections, committed to writing in a series of biographical sketches he drafted before his death in 2000, suggest that he was one of those boys who love taking apart devices to see how they and their circuits work, and seeking out books to help him understand what he could not figure out on his own. And he loved solving problems. He loved that, he would explain, the way a dog "loves to chase squirrels," adding, "I never got over that

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[143] Burkhart's resumes list him as a "research engineer" and "senior project engineer" at Monroe between 1949 and 1952, and then starting in 1952 as "Director of Electronic Research" or similar titles. In these documents, he indicated that the Monrobot and several later computers were developed under his direction. These resumes are in Burkhart's papers, provided courtesy of Dorothy Burkhart. Burkhart's oversight role in the development of the Monrobot – including the one used on election night and several later models – is listed in his resumes. The *Newsweek* article quoting Burkhart as Monrobot's "manager" was "The Machine Vote," Nov. 17, 1952, 63-64. In a company publication from November 1952 reporting on Monroe's election-night role ("Monrobot Flashes Election Trends," *Keynote*, November 1952, 10-11, in the records of the Monroe Calculating Machine Company, courtesy of Monroe Systems for Business (hereafter cited as MSB), Levittown, Pa.), Burkhart is identified as "Electronics Supervisor," while his boss, E.J. Quinby, is identified as "Director." Quinby's supervisory responsibilities and Burkhart's leading role in early computer design at Monroe are mentioned in interviews with Burkhart's widow, Dorothy Burkhart (interviews by the author, Los Altos, Calif., January 14-15, 2005), and coworkers Richard LaManna (telephone interview by the author, December 14-15, 2004), Vincent Pogorzelski (telephone interview by the author, April 20, 2005), and Irving Gardoff (telephone interview by the author, January 4, 2005).

Copies of the patents for which Burkhart applied, as William Henry Burkhart or William H. Burkhart, between his arrival at Monroe and the 1952 election (and for which patents were eventually granted) are in his papers: "Switching Circuit," with co-applicant Amir Hassan Sepahban, Patent No. 2,603,746; "Keyboard Operated Translating Circuit," with co-Howard M. Fleming Jr. 2,610,243; "Shift Register Circuit," Patent No. 2,601,089; "Electronic Computer," Patent No. 2,872,107; "Magnetic Storage Systems for Computers and the Like," Patent No. 2,739,299; "Magnetic Tape Error Control," Patent No. 2,628,346; "Keyboard Checking Circuit," Patent No. 2,700,755; "Operating Controls for Electronic Computers," with Joseph F. McCarroll Jr., Patent No. 2,855,584; "Decimal Point Locator," with Howard M. Fleming Jr.. and Frederick W. Pfleger, Patent No. 2,769,592; "Antikey-Bounce Circuit," Patent No. 2,735,091; "Multiplying and Dividing Means for Electronic Calculations," Patent No. 2,834,543; and "Switching Circuits," Patent No. 2,844,8111.

sickness."[144] After graduating from high school in 1940, college was not in his plans –

not immediately, anyway. He went to work as a radio serviceman and then for Western

Electric testing aircraft radio equipment and telecommunications systems. After the

United States entered World War II, he found himself in the Signal Corps, studying

electronics and electricity and waiting his turn to serve. But the trajectory of his life – and

his future college prospects – would change when the Army sent him to Harvard as a part

of a group of solders who were tasked with studying engineering. After a semester, the

Army shipped him off to Europe, where he moved from England to France to Germany

setting up radio and telephone communications for the American forces. Following the

war, he applied to Harvard, he would say later, because he expected that his high school

record would keep him from a college that cared about those grades. At Harvard,

ironically, the matter of grades would be trumped, he wrote, by having "done very well"

there when sent by the Army before his deployment to Europe.[145] He was admitted to

study mathematics and would graduate in 1949.

      Burkhart is not a standard figure in contemporary histories of early computing.

But he began making his mark on the computing world in two ways while still an

undergraduate at Harvard. The first of these – the construction of a machine combining

electrical circuits and logical reasoning – suggests that from his earliest interest in what

would come to be called computers, he had an idea that such devices could be small,

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[144] This comes from a set of autobiographical sketches that Burkhart began drafting after he retired, according to his wife, Dorothy, who made them available to me; these are referred to hereafter as "Burkhart biographical sketches."

[145] Burkhart autobiographical sketches, William Burkhart Papers.

accessible, and be applied to more than numerical calculation.[146] During his sophomore

year, 1946-47, Burkhart took a one-semester course in mathematical logic from the noted

philosopher Willard V. Quine. Work in the course involved developing truth tables –

basically, determining whether one or more statements are true or false based on a set of

premises. Burkhart and a classmate, Theodore Kalin, had read a paper by another seminal

figure of the era, Claude Shannon, about a relationship between electrical switching

circuits and mathematical or symbolic logic. In the spring of 1947, the two students set

about building a device – from about $150 in materials – that would generate truth tables

automatically from a set of conditions programmed into it by settings created with

various types of switches.[147] The results were displayed as a pattern of lights, in which a

glowing bulb was equivalent to "true." The machine was dubbed the Kalin-Burkhart

Logical-Truth Calculator. It was small enough to fit under a bed – 16 inches tall, 30

inches wide, and 13 inches deep.[148] But it was robust – said to take less than a minute to

determine the truth of 100 "cases," given a set of rules, and it could solve problems in

which there were up to a dozen different conditions. It received some notoriety in that

era, both as the first electrical machine to solve problems in logic and for its diminutive

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[146] The account here is developed from the following sources: Edmund C. Berkeley, *Giant Brains, or Machines that Think* (New York: John Wiley & Sons, 1949), 144-166, which is the first published and most complete account of the Kalin-Burkhart machine; Martin Gardner, *Logic Machines and Diagrams* (New York: McGraw-Hill Book Company, 1958), 128-130, which provides additional detail and was completed with input from Burkhart, who is acknowledged in the preface, vii; B.V. Bowden, ed., *Faster Than Thought: A Symposium on Digital Computing Machines* (London: Sir Isaac Pitman & Sons, Ltd., 1953), 186; Burkhart autobiographical sketches; William Burkhart's Harvard College transcript, provided by his wife, Dorothy Burkhart; and Dorothy Burkhart, interview by the author, Jan. 14-15, 2005.

[147] Berkeley, in *Giant Brains*, gives the date of Burkhart's course in mathematical logic as 1946 and construction of the Kalin-Burkhart machine between March and June 1947. Gardiner, in *Logic Machines and Diagrams*, identifies the professor as Quine, as does Burkhart in his autobiographical sketches. Burkhart's transcript lists him as taking the course Math. 19, Mathematical Logic, in the spring term of the 1946-47 academic year.

[148] Dorothy Burkhart recalled (interview by the author, Jan. 14-15, 2005) that Kalin at one point, in fact, did have the device stored under a bed.

size. This included an entire chapter devoted to it in a notable 1949 book, Edmund C.

Berkeley's *Giant Brains, or Machines That Think,* one of the first works of its kind for a

popular audience. The author himself was a 1930 Harvard alumnus who had returned to

work in Aiken's computation laboratory during the war. Berkeley argued that although

the diminutive Kalin-Burkhart machine had been built at a tiny fraction of the cost of

other "giant brains" described in the book – including ENIAC and the Harvard Mark I –

one could "properly call this machine a mechanical brain because it transfers information

automatically from one part to another of the machine, has automatic control of the

sequence of operations, and does certain kinds of reasoning."[149] The device was

demonstrated in June 1947 before several logicians and engineers, and it was moved for a

time to a life insurance company, where it was studied for its potential application in to

"drafting contracts and rules."[150] An impediment to its wide use, wrote Berkeley, was an

inadequate appreciation of its potential applications. But, he concluded, here was "an

electrical instrument for logical reasoning, and it seems likely that its applications will

multiply."[151] In fact, Burkhart would later note, as would science writer Martin Gardner,

that no practical application could be found for the Kalin-Burkhart device itself. But in a

book first published in 1958 for laymen, *Logic Machines and Diagrams*, Gardner wrote

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[149] Berkeley, *Giant Brains*, 165-166; "Edmund C. Berkeley," in J.A.N. Lee, *Computer Pioneers* (Los Alamitos, Calif.: IEEE Computer Society Press, 1995), 85-88.

[150] Berkeley, *Giant Brains*, 156. In the book, Berkeley does not name the life insurance company. But a typescript for the book with marked revisions indentified it as Prudential in Newark, N.J. This information was not included in the published book. The pre-publication version was included in a large collection titled the "The Origins of Cyberspace," assembled by Jeremy Norman and put up for auction at Christie's in New York on Feb. 23, 2005. The documents in this collection were available for inspection before the auction. Berkeley was a mathematician and actuary who had worked for Prudential and, as early as 1941 and 1942, had looked into ways that symbolic logic might be put to use by Prudential; see Yates, *Structuring the Information Age,* 120.

[151] Berkeley, *Giant Brains*, 166.

that Kalin and Burkhart's invention was of "great historic interest, marking a major turning point in the development of logic machines."[152]

Burkhart's other contribution to the early developments in computing was his work at Aiken's lab while still an undergraduate.[153] At the time, Aiken was overseeing the design and development of a new large-scale digital computing device – the Mark III, the first of Aiken's machines to incorporate electronics.[154] Aiken set Burkhart to work designing electronic circuits, to which Burkhart later recalled applying his knowledge of symbolic logic for reduction of the number of vacuum tubes needed to carry out particular tasks.[155] Burkhart received a nod from Aiken in print when Burkhart's work on "control-circuit theory" was included in volume Harvard published in 1951, *The Synthesis of Electronic Computing and Control Circuits*.[156]

In his letter to the Monroe Calculating Machine Company in the summer of 1949, Burkhart wrote that "Having now completed all but the final editing of the results of our research on design of calculator circuits, I feel no pressing obligation to remain at the Harvard Computation Laboratory and have turned my attention again to consideration of small-scale machine design."[157] He saw, in Monroe, the opportunity to do just that, writing that "In the event that construction of such a general purpose calculator at

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[152] Gardner, *Logic Machines and Diagrams*, 130.

[153] Burkhart wrote that he ended up working for Aiken after approaching Aiken for permission to take a graduate course in computing; Burkhart autobiographical sketches, William Burkhart Papers.

[154] The Mark III was being designed and built for the Navy; Cohen, *Howard Aiken*, 203.

[155] Burkhart autobiographical sketches, William Burkhart Papers.

[156] *Synthesis of Electronic Computing and Control Circuits*, by the Staff of the Computation Laboratory, *The Annals of the Computation Laboratory of Harvard University* XXVII (Cambridge, Mass.: Harvard University Press, 1951).

[157] Burkhart letter to Monroe, July 31, 1949, William Burkhart Papers.

Monroe is still a possibility I should enjoy more than anything else working with such a project."[158]

At Monroe, headquartered in Orange, N.J., just outside Newark and about 12 miles from New York City, Burkhart found a company with thousands of employees focused primarily on the design, manufacture, and sale of calculating machines and related equipment. The customers were businesses, government offices, educational institutions, and the military. The company's annual report covering 1952 dated the start of its "secret" work on computers to 1949, which was the year Burkhart arrived.[159] And, in fact, the company's report for 1949, published in early 1950, referenced work on an early Monrobot prototype as part of a discussion of the company's research initiatives: "[W]hat seemed most likely to be remembered about 1949's research was the important growth of its effort in electronics. Just where MONROBOT I (our study model) would lead nobody knew. But the dimly perceived possibilities were wondrous."[160]

Even as Monroe ventured into the world of electronic computers, the base was expanding for its traditional calculating and business machine operations – deemed in the report covering 1949 to be "less dramatic but more important to sales."[161] In a later report on its activities for 1951, Monroe boasted that the growing company had "made and sold more calculating machines than any competitor," and that it had manufactured a

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[158] Ibid.

[159] "Monroe's Annual Report to Employees," *Keynote*, March 1953, 7, records of the Monroe Calculating Machine Company, MSB.

[160] *Keynote*, March 1950, 17, records of the Monroe Calculating Machine Company, MSB; this edition of *Keynote*, a monthly in-house publication, was a special issue that provided a report to employees on the company's activities in 1949 and its consolidated financial statement.

[161] Ibid.

total of 68,376 calculating, adding, and accounting machines.[162] In 1952, the year when

Monroe would go public with the results of its computer development efforts, the

company started with 230 domestic branch offices and ended the year with 266,

increasing the size of the sales force for its core business by 10 percent and recording

profits approaching $1.3 million on $30 million in sales. The company was also adding

capacity to a plant in southern Virginia and another to a subsidiary operation in the

Netherlands. Still, by the end of 1952, those "dimly perceived possibilities" for

electronics had reached sufficient clarity for Monroe to open a new plant in Morris

Plains, N.J., and move its electronics operations there, including the "Monrobot

Laboratory."

A description of the work of the Monrobot Laboratory printed just a few months

after the 1952 election provides a glimpse into the kind of ferment then taking place

nationwide within companies manufacturing of an array of products, from office

machines to television sets, where electronics were not only changing the way things

worked, but the make-up of the workplace at the cutting edge.[163] At the Monrobot

Laboratory, the executive in charge, E.J. "Jay" Quinby, had a long pedigree – more than

three decades of research experience, much of it with RCA Laboratories and then as a

senior Navy officer during World War II.[164] He held patents from that era related to such

devices as radios, loudspeakers, phonograph records, and a railway electric signal

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[162] "The Open Book of a 'Closed' Corporation" [1951 annual report], Monroe Calculating Machine Company, [1952], 5, in the records of the Monroe Calculating Machine Company, MSB..

[163] "Presenting Information on Facilities for Military Production for the Consideration of Armed Forces Procurement Authorities," brochure, Monroe Calculating Machines Company, June-July 1953, 17-21, records of the Monroe Calculating Machine Company, MSB.

[164] These details in the Monroe report are consistent with brief mentions of Quinby's work at RCA and the Navy in a memoir dealing primarily with an earlier part of his life; E.J. Quinby, *Ida was a Tramp – and Other Reflections* (Hicksville, N.Y.: Exposition Press, 1975), 247-260.

system.[165] After the conclusion of his Navy service in 1949, he was brought in to

Monroe to "establish the necessary research and development" to help the company move

into computers, he wrote in a brief reference to Monroe in a memoir about his earlier

life.[166] In addition to Quinby, the Monroe report touted the work being done by its

"inventors from the new world of electronics and electrical engineering."[167] The "key

personnel" under Quinby were said to be "young men with an average age of thirty,

progressive, imaginative men who are highly trained in the techniques of exploring the

unknown, yet seasoned and practical men with a mature approach to their profession."[168]

Over half had served in World War II. And they came from top schools – including three

with master's degrees from Harvard. Richard LaManna, who would go on to rise through

the ranks at Monroe, was a freshly minted engineering graduate from the University of

Maryland when he arrived there in 1951. He was excited about the prospect of being on

the cutting edge. And the work did not disappoint. "Everything we did," he said, "was

new."[169] What was also new, said Irving Gardoff, who came to work at Monroe in 1952,

was that those designing and touting new computers did not know for sure who the

customers might turn out to be. And that, he said, was because the customers – the

potential ones – didn't know they were going to be customers.[170]

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[165] His patents from this era can be found online at http://www.google.com/patents.

[166] Quinby, *Ida was a Tramp*, 260.

[167] "Presenting Information on Facilities for Military Production …" 17-21, records of the Monroe Calculating Machine Company, MSB.

[168] Ibid, 19.

[169] Richard LaManna, telephone interview by the author, December 14-15, 2004.

[170] Irving Gardoff, telephone interview by the author, January 4, 2005.

The Monrobot that was the focus of their work was not at all robust. But its diminutive features in other ways – size, price, and complexity – placed it among a category of early computers that attracted the attention of the Pentagon in 1952 for precisely those features. The U.S. military was not only an important early customer of computers but an important player in the exchange of new ideas about computing. On May 14, 1952, the Navy Mathematical Computing Advisory Panel, meeting at the Pentagon, convened its "Symposium on Commercially Available General-Purpose Electronic Digital Computers of Moderate Price." The Monrobot – with the formal name of "MONROBOT III Electronic Calculator" – was one of seven computers featured.[171]

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[171] E.J. Quinby, Monroe Calculating Machine Co., "The MONROBOT Electronic Calculators," in *A Symposium on Commercially Available General-Purpose Electronic Digital Computers of Moderate Price,* 7-11, NMAH. The Monrobot III is typically the first Monrobot model listed in a number of surveys of early computers done in the 1950s and 1960s. Among these surveys are: (a). *A Survey of Automatic Digital Computers*, Office of Naval Research Washington, D.C., 1953, Box 252, Computer Documents, NMAH; and (b) Martin H. Weik, *A Survey of Domestic Electronic Digital Computing Systems*, Ballistic Research Laboratories Report No. 971, December 1955, http://ed-thelen.org/comp-hist/BRL.html. One exception to the surveys showing the Monrobot III as Monroe's first working Monrobot is a list of early computers that appeared in a computer textbook published in 1963: Ned Chapin, *An Introduction to Automatic Computers,* 2nd ed. (Princeton, N.J.,: D. Van Nostrand Company, Inc., 1963), 190. In a four-page chronology of "automatic computers," Chapin includes "Monrobot-I" as being commercially available, as being installed first at Ft. Monmouth, N.J., and with March 1953 as the "estimated date" that it "passed [its] acceptance test." The source of this information is not cited, and I have not to date encountered any direct references elsewhere to a Monrobot I at Ft. Monmouth or to a viable Monrobot model before the Monrobot III. However, as noted earlier, Monroe's annual report covering 1950 referred to a Monrobot I as a "study model." A Monroe brochure from mid-1953 ("Presenting Information on Facilities for Military Production for the Consideration of Armed Forces Procurement Authorities," brochure, Monroe Calculating Machines Company, June-July 1953, records of the Monroe Calculating Machine Company, MSB.) mentions, under the heading "Military Production at Present," two "Prime Contracts," both for an "Electronic Computer, Digital Type." One was listed as being for the "Air Force Cambridge Mass. Research Laboratory," which did get a Monrobot III (per other documentation: "Monrobot Electronic Calculator Model III – Manual of Operating Instructions, Prepared for Air Force Cambridge Research Center, Cambridge, Mass.," instruction manual, Monrobot Corporation [subsidiary of Monroe Calculating Machine Company], 1953, in the papers of William Burkhart, courtesy of Dorothy Burkhart). The other of these two computers mentioned in the mid-1953 Monroe brochure was listed as being for "Army Engineers Research and Development Laboratory," with no location given. This is consistent, however, with the ultimate destination of the next Monrobot model under development, the Monrobot V, which was delivered to the Army Corps of Engineers' Research and Development Laboratory at Fort Belvoir in Maryland in 1955 ("Monrobot V Goes to Uncle Sam," *Keynote*, April 1955, 5, records of the Monroe Calculating Machine Company, MSB.). There is no mention of a Monrobot I or II in William Burkhart's resumes, which do include references to the Monrobot III and later models. His co-worker, Richard LaManna, who arrived at Monroe in 1951 to work in the unit developing computers, said he believed there had been two early iterations of the Monrobot before he came but that he did not see them and that at the time of the election, the Monrobot III

The report submitted by Monroe for the symposium, under Quinby's name, featured a

publicity photograph showing a young woman sitting at the computer's keyboard, and it

included this claim: "The most important single feature of the MONROBOT is its

simplicity… Even a novice finds it possible to program problems after the first day's

acquaintance with the input keyboard."[172] Another big selling point was its economy of

space – "only 700 vacuum tubes and 200 diodes are employed throughout."[173] And the

Monrobot looked like office furniture. The "computer" unit in which data were entered

and programs carried out occupied a cabinet of the size and appearance of an office desk.

This was connected by cable to the rest of the Monrobot's equipment, which could sit on

top of an ordinary office desk. These peripheral components included a small keyboard

for the entry of data and programs, and a combined printer and device for entering data

and programs into the computer through holes punched in paper tape. The desk-sized

computer unit housed a magnetic drum on which data and instructions would be stored,

along with the vacuum tubes and circuits for carrying out calculations – and even a

mechanism for piping in air to combat the heat generated by all of those vacuum tubes.

The computer unit also contained a power source that would allow the Monrobot

to be started up gradually in order to minimize the chances of vacuum tubes burning out

at that phase of operation. And, in fact, one of the challenges for computers and other

electronic gear of that era was that vacuum tubes did burn out. Richard LaManna, who

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was the computer on which his unit was working (Richard LaManna, telephone interview by the author, Dec. 14-15, 2005). The next Monrobot model, the Monrobot V, got its debut in 1955 for use by the Army in mapmaking (reported in various places, including: "Monroe Machine for Improvement of Army Map-Making is Unveiled," *Orange (N.J.) Transcript*, March 10, 1955, news scrapbook, 1955-1957, records of the Monroe Calculating Machine Company, MSB.

[172] Quinby, "The MONROBOT Electronic Calculators," 7, NMAH.

[173] Ibid., 8.

worked on the Monrobot, said one of the means of locating dead tubes was to darken the room in which it was operating in order to identify those that were not lighting up.[174]

The Monrobot could be programmed do sequences of basic mathematical operations – addition, subtraction, multiplication and division. It could compare numbers and, based on the result, select the next step to take in a program. It could undertake calculations on the results of previous calculations. In that way, complicated mathematical functions could be carried out by repetitions of ever more refined approximations until an answer was reached by a process known as convergence. Instructions in a program could also be modified automatically based on the results of a particular step. A program could be set up to read data in from punched tape and to print out results in text and numbers, including information presented in tabular arrangements. Standard paper or special forms could be used with the printer. The Monrobot's drum memory could hold 100 positive or negative numbers of up to 20 decimal digits each, with a decimal point fixed between the 10th and 11th digits. The computer's memory could also hold the "operational orders" that comprised a program – listed in various Monroe documents as up to either 100 or 200 steps.[175]

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[174] Richard LaManna, telephone interview by the author, Dec. 14-15, 2004.

[175] Sources for Monrobot specifications from the William Burkhart Papers include: "Monroe Electronic Calculator – MONROBOT – A new tool for business and science," brochure, Monroe Calculating Machine Company, April 1952; and "Monrobot Electronic Calculator Model III – Manual of Operating Instructions, Prepared for Air Force Cambridge Research Center, Cambridge, Mass.," instruction manual, Monrobot Corporation, subsidiary of Monroe Calculating Machine Company, 1953. Other sources include: Quinby, "The MONROBOT Electronic Calculators," in *A Symposium on Commercially Available General-Purpose Electronic Digital Computers of Moderate Price,* 8, NMAH.

The 1953 Monrobot operating manual indicated that the Monrobot's drum memory could hold up to 100 operational orders. The April 1952 brochure and Monroe's May 1952 presentation at the Pentagon symposium reported that the Monrobot's drum memory could store up to 200 operational orders.

The Monrobot was, when compared to other computers of the day, slow. It could carry out 450 additions or subtractions per minute, and 100 multiplications or divisions. On election night, CBS correspondent Charles Collingwood would tell viewers that the UNIVAC could do 2,000 additions in a second, 500 multiplications, and 250 divisions.[176] The Monrobot was also slow compared to other small computers included in the Navy symposium. Monroe made no secret of the Monrobot's rate of calculations, but tried to put the best spin on it. The Monrobot's operating manual tried to make a virtue of the computer's speed by comparing it favorably to pre-computing technology. With the Monrobot, said the manual, "computation is completely automatic and is carried out at a speed greatly exceeding that attainable by mechanical calculators."[177]

Company literature also made sure prospective clients for the Monrobot understood that the speed at which a particular operation could be carried out was not the only consideration related to time and efficiency. Ease of use was also said to be an important consideration along those same dimensions. A brochure that appears to date from April 1952 described the "Monrobot Electronic Calculator" as a "general-purpose, sequence-controlled, digital computer" and noted that it had "been developed during the past three years to meet the increasing demand in many business, military, and research organizations for a compact, reasonably priced, and easily operated digital computer

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[176] Election Coverage, part 1, CBS Television News, Nov. 4. 1952, Paley Center for Media, New York, N.Y.

[177] "Monrobot Electronic Calculator Model III – Manual of Operating Instructions," William Burkhart Papers.

having wide numerical range and versatility of application."[178] Readers were reminded that:

> The total operating time normally required to solve a problem by digital computation includes not only machine operating and printing time but also the time necessary for programming (or coding) the problem, scaling the problem, converting inputs to the number system used by the computer, and converting outputs back to the decimal system. In the Monrobot Electronic Calculator, these non-computational procedures have been either eliminated or greatly simplified.[179]

In addition, the fact that one could operate the Monrobot without a great deal of special expertise was also held up as an important factor in considering the time needed for computer use. "The programming of problems is straightforward and requires no special mathematical training," said the brochure. "Common sense and facility in handling elementary algebraic operations are the only prerequisites for a good programmer." And, it added, "No knowledge of the internal operation of the equipment is required."

Because of the Monrobot's relative simplicity and its ability to work from stored programs, Monroe positioned its new computer in two general ways. One was for problems that were not too complicated but involved repetitions of operations on large volumes of data – the sort of thing needed in accounting, banking, and the actuarial work done at insurance companies. The other general category of use was for complex calculations in engineering, applied mathematics, and science – both in applications where "the usefulness of electronic digital computers has already been firmly

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[178] "Monroe Electronic Calculator – MONROBOT – A new tool for business and science," William Burkhart Papers. A small notation on the last page includes the words "Printed in U.S.A." and "4-52," apparently the date, judging from the reference in the brochure to a computer having been under development for three years.

[179] Ibid.

established" and in other areas where "the potentialities of these computers are just beginning to be appreciated."[180]

Monroe's characterization of the market was not unlike that of other computer makers. But while the computer boosters were eager to expand awareness of these "potentialities" in the early 1950s, there is no evidence before the second half of 1952 that they envisioned journalism as among the potential customer base for their wondrous new machines. The dovetailing of the manufacturers' desire for attention with the desire of those in television to establish a foothold for their medium as a respected venue for news was an intersection of interests that was not in either camp's playbook before 1952. Election night would become the crucible for bringing them together.

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[180] Ibid.

Chapter 5: Joining Forces for Election Night 1952

So how did it come about that computers and journalism were linked for real-time election-night reporting and analysis in 1952, and how is it that there was not just a single instance of computer use by a single news organization? These questions can be answered only imperfectly because of the passage of time and the limitations of the documentary and human record. But enough pieces of the puzzle have turned up to make some relevant observations. Despite an articulation by some observers of skepticism about election-night computer use – and despite an articulation by some participants of concern about the risks of prognostication, including memories of pollsters' and pundits' difficulties in 1948 – players from the worlds of computing and journalism found in their intersecting interests the grounds to push through with plans for – and wondrous promotion of – their seminal and sentinel convergence.

The precise origins of intersections at NBC and CBS with the makers of the UNIVAC and the Monrobot computers are not yet clear, but there are some hints that the perception from the outset of mutual benefit was a driving force. Less is known about the origins of plans to use electronic IBM punched-card equipment in several venues: at the ABC television network election headquarters; at a New York newspaper collaborating with a local ABC station in New York for election-night coverage; and in connection with election-night reporting efforts at several wire service offices, newspapers, and even an NBC broadcast in Los Angeles. But from internal network documents and other sources, it is clear that in the cases of CBS and NBC, at least, plans involving the

computers were being developed before either network went public with the

arrangements.

CBS and UNIVAC Team Up

The UNIVAC-CBS plan appears to have been hatched several months before the

election. There is a lack of agreement about the date, but some accounts attribute the

initial contact to a publicist for Remington Rand, the New York-corporate parent of the

Eckert-Mauchly Division's UNIVAC operations in Philadelphia. Sig Mickelson, then the

television network's director of news and public affairs, wrote in a 1989 memoir that the

idea surfaced "almost by chance" after CBS election-night plans were already well along.

Speaking of Paul Levitan, a senior member of the CBS election-planning staff, Mickelson

wrote:

> [He] burst into my office with stars in his eyes. He had just finished
> lunching with a public relations representative of Remington Rand. His
> excitement was generated by an offer he had received to supplement our
> broadcasting of election returns by using a device that would enable us to
> predict the outcome of the election at an early hour, while polls were still
> open in many states. The device, called Univac, he was assured, could
> produce accurate projections, provided we could deliver the essential raw
> material to create a data base and a competent programmer could be found
> to use our data base to write a program. [1]

Elmer W. Lower, who would later work at CBS before becoming president of ABC

News, wrote in 1970 of some conversations he had with Levitan about the origins of the

plan to use UNIVAC for the CBS election-night broadcast. In Lower's account, Levitan

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[1] Mickelson, *From Whistle Stop to Sound Bite,* 137-138. CBS press releases dealing with election-night coverage in 1952 identified Levitan as "Producer of Special Events for CBS-TV"; see "CBS-TV's Plans for Nationwide Election Day Coverage," press release, CBS, Sept. 25, 1952, CBS Audience Services, New York, N.Y.

had initially approached Remington Rand for equipment to use in the election-night

broadcast, but not for a computer:

> [In] a search for several hundred typewriters and calculators for use on
> election night, Levitan's pursuit led him to the home offices of the
> Remington Rand Corporation at Fourth Avenue and Twenty-fourth Street
> in New York City. There he met a veteran newspaper reporter-turned-
> public relations executive named Arch Hancock. Before their conference
> was over, Levitan had a brand new idea in his head and a $600,000
> electronic toy in his pocket. The idea was to use an electronic computer to
> project the presidential returns early in the evening, probably before the
> polls closed in many mountain and Pacific Coast states. The new toy was
> Univac I...[2]

Just when this encounter between Remington Rand's publicist and Levitan took

place varies in the telling. Mickelson dates it to early August 1952. Lower places it in

early September – during the week after Labor Day, which was Sept. 1. On election

night, CBS correspondent Charles Collingwood would report that 25 people had been

working for the prior six weeks – placing the start of the intense phase of preparations in

late September – to develop specific plans for using the UNIVAC to generate a

prediction.[3] As for where and when within Remington Rand the idea may have

originated, there are some indications in accounts left by participants. Herman Lukoff,

then a senior engineer at the Eckert-Mauchly Division, wrote in a 1979 memoir that this

idea had come from Arthur F. Draper.[4] The latter would go on to be the human face of

the UNIVAC operations on election night, when he was introduced to the television

audience as head of the new products division at Remington Rand's laboratory for

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[2] Lower, who completed a master's degree after becoming a television news executive, reported this in his master's thesis, writing that "these facts have emerged from numerous conversations [with Levitan]. In particular, I interviewed Levitan for this paper on August 27, 1966." He described Levitan as "a long-time friend and colleague"; Elmer W. Lower, "Use of Computers in Projecting Presidential Election Results, 1952—1964," Master's thesis, Columbia University, 1970.

[3] Election Night Coverage, part 1, CBS Television, Nov. 4, 1952, PCM.

[4] Lukoff, *From Dits to Bits,* 127.

advanced research in Norwalk, Connecticut. Arthur L. Norberg, a historian of Remington

Rand's move into computers after World War II, which involved the acquisition of the

Eckert-Mauchly Computer Corporation and another early computer firm, writes that

Draper "had been assigned the task of integrating EMCC into Remington Rand" and

"became the operations/general manager of EMCC as it fit into the daily operations" of

the larger corporation.[5] Lukoff wrote of the election-night forecasting idea that Draper

approached UNIVAC co-inventor John Mauchly to see if it was feasible, and that

Mauchly brought in Max A. Woodbury, an associate professor of statistics at the

University of Pennsylvania, to work out the formulas.[6] Woodbury himself recalled in a

2004 interview that Hancock, the Remington Rand publicist, had reached out to him at

Mauchly's suggestion, and that Woodbury and Mauchly had previously gotten to know

each other when both attended a seminar led by the noted statistician John W. Tukey.[7] A

Remington Rand report authored after the election by Woodbury and Herbert F. Mitchell

Jr., listed as director of the UNIVAC Applications Department, gave Oct. 7 as the date

Woodbury was formally engaged to provide a "sound statistical procedure" for the

election-night work.[8] Draper himself, in a paper presented at a conference in early 1953,

dated the origins of the election-prediction idea to a point months earlier than events

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[5] Norberg, *Computers and Commerce,* 214.

[6] Lukoff, *From Dits to Bits*, 127.

[7] Max A. Woodbury, interview by the author, Birmingham, Ala., Sept. 30, 2004. Mauchly's own datebook for the period while this work was underway does not provide clear clues about the start of the election-night effort, but there is an entry for Sept. 5 indicating that Mauchly and his wife, Kay, had dinner with Max Woodbury while the couple were on an out-of-town trip to Michigan, perhaps to attend a conference. John Mauchly, datebook, 1952, Box 3:D:2, John W. Mauchly Papers, UP-RBML.

[8] Max A. Woodbury and Herbert F. Mitchell Jr., "How UNIVAC Predicted the Election for CBS-TV," Dec. 15, 1952, Box 263, Sperry-UNIVAC Company Records, HML. As noted in Chapter 1, there are other copies of this report in other archives with variation in one detail for the chronology of events on election night, but they do not differ on Oct. 7 as the date Woodbury was engaged for work on the project.

described in other first-person accounts, saying that "the possibility of tackling this job was first discussed some six months before the election."[9] Woodbury was called in, Draper said, after preliminary work was first done to investigate the problem and as it became clear that outside help would be needed – Woodbury's – "as time began to run out." Draper's account – which also appeared in a trade publication in April 1953 – does not indicate whether or not the idea of a computer-generated prediction surfaced inside Remington Rand camp with a particular network alliance in mind.[10]

At CBS, when the notion of including a UNIVAC in the election-night broadcast was presented to Mickelson, he grasped that there were several ways in which this was likely to serve the network's purposes. In essence, the computer could be used for quick analysis, for a competitive edge, and for boosting both ratings and prestige:

> If the parts meshed properly and the program was properly written, we could in all probability announce the winner of the presidential race while our competitors were still floundering in a sea of unsorted data. The novelty value of using Univac was certain to attract attention from both viewers and the print media…
> I knew just enough about computers to know that they could perform mathematical miracles. I was also aware of the promotional shot in the arm that the use of the device would give to our coverage. It was a

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[9] The paper – A. F. Draper, "UNIVAC on Election Night; For AIEE Meeting January 22, 1953"- was found in two archives: (1). Box 382, File: "Sperry UNIVAC – History – 1950's," Sperry-UNIVAC Company Records, HML; and (2) Box 3:C:8, Folder 191, John W. Mauchly Papers, UP-RBML.

[10] The article – A.F. Draper, "UNIVAC on Election Night," *Electrical Engineering*, April 1953, 291-293 – carries this note: "Revised text of a conference paper presented at the AIEE Winter General Meeting, New York, N.Y., January 19-23, 1953…" In addition to the accounts noted here, there are additional references either to the birth of the idea of using a UNIVAC on election night or to the start of work on the project, though not definitive. For example, a transcript of comments Walter Cronkite made on Oct. 16, 1952, about the election-night plan mentioned that several "scientists" had been working on data gathering for "two or three months" in connection with the election-night forecasting. This would push that effort closer to the early August date mentioned by Mickelson, but the transcript itself also has a number of typographical errors in various places; "New Device to Be Used to Give Public Election Returns," transcript of broadcast hosted by Dorothy Fuldheim at 6:30 p.m. over WEWS-TV (Cleveland), Oct. 16, 1952, prepared by Radio Reports, Inc., for Remington Rand, Inc., Box 6, Folder 8, Charles Collingwood Papers, WHS. Harry Wulforst, who himself was later a publicist for Remington Rand's successor company, Sperry Rand, provides an account in *Breakthrough to the Computer Age* (p. 163). He dates the initial contact between CBS and Remington Rand to April 1952, but without citing his sources.

highly promotable tool and might give us the additional top spin that we
needed to build our ratings to a level that would permit us to fight it out on
even ground with the (at the time) far larger NBC.[11]

Mickelson would also recall that his "quick and favorable" response to Remington

Rand's proposal to use the UNIVAC in 1952 was the "by-product" of his experience in

covering elections in Minnesota in the 1940s, when the analysis he prepared ahead of

time of past trends in a few key areas allowed him to use early returns to foresee the

outcome.[12]

CBS did not go public with the computer plans at first – but did refer to them with

an air of mystery. On Sept. 25, the network issued a very detailed press release on its

arrangements for the reporting of election returns, said to have begun taking shape back

in March. Walter Cronkite was named as "anchor-man" – the term, a relatively new one

in broadcast journalism, set apart in quotation marks.[13] Key members of the "crack news

team" were named – Edward R. Murrow, Charles Collingwood, Douglas Edwards,

Lowell Thomas, and others.[14] Don Hewitt – who would go on to launch *60 Minutes*, one

of the most successful television news programs for CBS – was to be "in the director's

slot," controlling the flow of images.[15] Levitan was in charge of arranging for "pick-ups"

from remote cameras around the country. Fritz Littlejohn, the CBS television news

managing editor, was to control assignments and the routing of incoming news

dispatches. His duties were to include getting the numbers to the right "computing group"

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[11] Mickelson, *From Whistle Stop to Sound Bite*, 138.

[12] Mickelson, *From Whistle Stop to Sound Bite*, 148-149.

[13] "CBS-TV's Plans for Nationwide Election Day Coverage," press release, CBS, Sept. 25, 1952, CBS-AS.

[14] Ibid.

[15] Ibid.

– from the context a reference to people doing calculations, not to electronic computers.[16] And Mickelson was to be in charge of "more than 200 editorial, technical, and production personnel in the giant task of showing what happens as the nation's voters go to the polls on November 4."[17] He boasted in the release that the CBS team "constitutes the largest television task-force ever assembled to cover a one-day public event."[18] There were details about the location from with the broadcast would originate – three large studios at Grand Central Terminal. The set was described, and there was mention of "new and improved visual aids – some of them still a trade secret."[19] There were descriptions of the work of the CBS television research and news art staffs, who had been busy, among other things, with "working out trends, significant relationships and background data."[20] There was a nod to the sponsor – Westinghouse Electric Corp. And there was one other breathless detail: "Mr. Mickelson said that details of a revolutionary method, involving the latest scientific principles, for informing the public of what is happening around the country as it happens – along with its possible significance – will be revealed just prior to Election Day."[21]

The September 25 release did not elaborate on this "revolutionary method," but the network opted not to wait until just before Nov. 4 to let the word out. On Oct. 14, the network issued a four-page release announcing: "CBS-TV to Use Giant Electronic

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[16] Ibid.

[17] Ibid.

[18] Ibid.

[19] Ibid.

[20] Ibid.

[21] Ibid.

'Brain' Election Night."[22] While much of the release was a reiteration of the earlier plans – including people and logistics – UNIVAC was now the headliner. Its multiple uses were in evidence – as a contribution both to the night's journalistic tasks and audience-engaging imperatives. One advantage of this tool, in conjunction with the work of that aforementioned "team of crack CBS-TV newsmen," was to be speed – "lightning-speed," in fact.[23] This "latest and most versatile of the 'Giant Brains' that the new science of electronics has produced" was to help "give the viewing audience accurate foreknowledge of election results at an earlier hour than ever before possible."[24] CBS pointed out that "the 'brain' does not think creatively, as yet," but could do work equal to the "combined mental efforts of approximately 400 trained clerks."[25] At "about 18,000 times normal brain size," it was said to be able to do 2,000 additions in a single second, 500 multiplications, or 250 divisions, taking advantage of a "a 'memory' bank of magnetic tapes capable of retaining up to 15,000,000 separate characters of information."[26] Returns were to be transmitted by various means to the UNIVAC's home base in Philadelphia, and the results of the computer's analysis were to be transmitted back to the CBS studio by means of a large screen. The UNIVAC itself would also put on a show, with the television audience having opportunities to watch it work.

The CBS announcement provided a summary of the methodology to be used:

> For many weeks prior to Nov. 4, a team of statisticians,
> mathematicians, researchers and political analysts will have fed into

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[22] "CBS-TV to Use Giant Electronic 'Brain' Election Night," press release, CBS, Oct, 14, 1952, CBS-AS.

[23] Ibid.

[24] Ibid.

[25] Ibid.

[26] Ibid.

> UNIVAC's fabulous 'memory' the election results of each state in the 1944 and 1948 elections. The material will include total popular and electoral vote for each candidate in each state – all broken down to an hour-by-hour basis. The total national popular vote for each candidate as it stood at each hour during those Election Days will also be fed into UNIVAC.[27]

In addition, the computer would get the voting history in eight states – New York, Pennsylvania, Massachusetts, Ohio, Illinois, Minnesota, Texas, and California – with separate figures for the metropolitan and non-metropolitan vote. One could infer from the description that the partial vote totals as they would come in on election night were to be used to detect trends consistent with or away from the past vote, though this was not made explicit in the release. The plan called for reports from the UNIVAC at least once an hour during the broadcast.

The UNIVAC was envisioned as helping individual CBS journalists understand what was going on as the vote rolled in, giving them "broader knowledge" of nationwide developments to use in framing their own reports.[28] But we can see now, in retrospect, a flaw in the one-way flow envisioned for this "broader knowledge." There was no mention of the assessments of experienced journalists flowing back to Philadelphia as a check on the predictions coming out of the computer. It was an oversight that would come back to plague the operation on election night. That may be, perhaps, because of the way that controlling for the risk of "error" was envisioned:

> It is reassuring to note that of the 5,500 electronic tubes in UNIVAC's "brain case," only 3,500 are actually needed for operation. The other 2000 are there to provide the checking circuits that eliminate the possibility of UNIVAC making an error without knowing about it. [29]

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[27] Ibid.

[28] Ibid.

[29] Ibid.

What if there were to be a problem on election night not with the functioning of the computer, but with deciding whether to trust the results if the computer program did just what one might wish for in a knockout demonstration of UNIVAC's power – detecting a surprising deviation from what was expected? Whether any consideration was given to that possibility, the release provides no hint of it.

The story of CBS teaming up with UNIVAC – as the "Electronic Brain," the "Electronic Robot" and the "Machine with Memory" – was picked up by the Associated Press and the United Press and made its way around the country to run in newspapers on Oct. 15. It turned up in some places as a front-page story and in others as a news brief. [30] Both wire stories carried a Philadelphia dateline of Oct. 14, and the content suggests that Remington Rand put out its own information for the press. Philadelphia newspapers ran their own stories noting the UNIVAC as a hometown product.[31] There was even a publicity photo. It appeared in at least one Oct. 15 edition of *The Evening Bulletin* in Philadelphia, showing UNIVAC co-inventor J. Presper Eckert and CBS's Walter Cronkite conferring over a computer printout as UNIVAC operator Harold Sweeney sat at the machine's console in the foreground.[32] The Associated Press story described the

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[30] For example, the Associated Press story ran on page one of the *Syracuse (N.Y.) Post-Standard* ("Electronic Robot to Forecast Election Results on TV Nov. 4"), the *Titusville (Pa.) Herald* ("Electronic Robot Will Forecast Vote Results for TV Viewers"), the *Baltimore Sun* ("Electronic Brain To Be Used To Forecast Election Results"), and the *Oneonta (N.Y.) Star* ("Machine With Memory; Electronic Robot To Forecast Election Data"). One of the most complete versions of the AP story ran in the *Hartford Courant* ("UniVac, Electronic Robot, Fattened for Election Duty." 21B). Three-paragraph versions ran in such papers as the *Los Angeles Times* ("Electronic Robot to Forecast Election Results for CBS-TV," 25) and the *New York Times* ("Univac the Brain Unafraid To Be Out on Limb Nov. 4," 27). Papers running the United Press story included the *Capital Times* in Madison, Wis. ("'10-Minute Job'; Electronic Brain to Spot Vote Trends," 12).

[31] These included "Vote Forecast by Machine," *Philadelphia Inquirer*, Oct, 15, 1952, 38, and "CBS to Use Electronic Robot to Forecast Election Results," *Philadelphia Evening Bulletin*, Oct. 15, 1952, 9.

[32] This photograph appears under the caption "Network 'Drafts' Univac for Election Coverage" in an edition of the *Evening Bulletin* online at http://www.library.upenn.edu/exhibits/rbm/mauchly/ img/11cronk.jpg as part of an exhibit, "John W. Mauchly and the Development of the ENIAC Computer,"

UNIVAC with images its audience might grasp – the operator's control terminal was said to look "somewhat like the console for a pipe organ" – and the prospective methodology was described in terms that were also easy to understand as a comparison of the 1952 vote count to past voting trends.[33] Described as "the first use of one of the giant electronic computers on election returns," UNIVAC's upcoming role was described as both an "adjunct" to the CBS coverage and "an experiment."[34] The latter carried human-vs.-machine overtones:

> The $600,000 electronic computer will be used by CBS television to see whether its prodigious capacity for making calculations and analyses will make it possible to indicate the final outcome with a fair degree of accuracy on the basis of incomplete returns.
> Officials at Remington Rand, which built the machine, emphasize that it isn't psychic. But they and CBS say it will make possible comparisons on a scale and at a speed that would be impossible by conventional methods.[35]

The outcome was yet to be determined, but representatives of both the network and the computer maker were clear about their expectations.

Not all journalists – some at CBS, included – were ready to buy into that expectation. In a late-night broadcast over Washington-based WTOP and the CBS Network, CBS newsman Eric Sevareid was not shy about his reservations, which were

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Department of Special Collections, Van Pelt Library, University of Pennsylvania, Philadelphia, Pa. (at http://www.library.upenn.edu/exhibits/rbm/mauchly/). This image, which does not appear in one microfilmed edition of *The Evening Bulletin* for that date that I examined for this dissertation, has been widely circulated on the Internet.

[33] This phrase also appears in the *Evening Bulletin* story. The account of the AP story here is from the version that appeared in the *Hartford Courant: "*UniVac, Electronic Robot, Fattened for Election Duty," Oct. 15, 1952, 21B.

[34] *"UniVac, Electronic Robot, Fattened for Election Duty," Hartford Courant*, Oct. 15, 1952, 21B.

[35] Ibid.

tacked on the end of a news brief. A transcription service employed by Remington Rand

recorded his remarks this way:

> In Philadelphia, CBS and Remington Rand have told of a new experiment the network will hold on election night. An eight-foot mechanical brain called a Univac will be set up to predict election results. It will do this on the basis of early returns. Television watchers will see lights blinking, then see the predictions typed out. Whether the mechanical pundit will better its human betters remains to be seen.[36]

Two days later, Walter Cronkite also displayed less than wholehearted confidence in the

election-night value of the UNIVAC plan when he was interviewed on air about

arrangements for the Nov. 4 broadcast.[37] The host of the interview program on a CBS

television affiliate in Cleveland, Dorothy Fuldheim, was herself a broadcasting pioneer

who had taken to the airwaves on radio and then television when female newscasters and

commentators were a rarity.[38] According to a transcript prepared for Remington Rand,

Cronkite reported that while the "basic formula" was going to be the same as the past – a

"straight report" of the returns – there was also to be "a little gimmickry" (misspelled in

the transcript as gimmitry).[39] This would be using an "electronic brain" – with Cronkite

mistakenly referring to it as "the only one now functioning in the country" – to predict

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[36] "CBS and Remington Rand tell of Election-Night Experiment in which Univac Will Predict Election Results," transcript of broadcast by Eric Sevareid at 11 p.m. over WTOP (Washington) and the CBS Network, Oct. 14, 1952, prepared by Radio Reports, Inc., for Remington Rand, Inc., Box 6, Folder 8, Charles Collingwood Papers, WHS.

[37] "New Device to Be Used to Give Public Election Returns," transcript of broadcast hosted by Dorothy Fuldheim at 6:30 p.m. over WEWS-TV (Cleveland), Oct. 16, 1952, prepared by Radio Reports, Inc., for Remington Rand, Inc., Box 6, Folder 8, Charles Collingwood Papers, WHS.

[38] For Fuldheim profiles and obituaries, see: Associated Press, "Dorothy Fuldheim, 96, A News Commentator," *New York Times*, Nov. 4, 1989, 10; Charles Hillinger, "Newscaster Still With Original Station; TV Pioneer Gets Her Share of Air Time," *Los Angeles Times*, Dec. 26, 1982, C6; United Press International, "Newswoman, 82, 'Just Warming Up,'" *Hartford Courant*, Jan. 14, 1976, 35.

[39] "New Device to Be Used to Give Public Election Returns," Fuldheim transcript, WHS.

the outcome by comparing returns as they come in to returns from 1944 and 1948.[40] His description included terms reflecting awe for the "fantastic device," respect for the preparations being done "carefully" by "scientists," and characterization of the "gimmickry" as "most interesting."[41] But then he concluded with this: "Actually we're not depending too much on this machine. It may turn out to be just a sideshow, we don't know, and then again it may turn out to be … very unique and of great value to some people."[42]

Cronkite's ambiguous response and Sevareid's lack of enthusiasm for computer use on election night – when both would be called upon for their own reporting and analysis – were not universal reactions among network's news staff. The Oct. 14 press release from CBS had noted that Charles Collingwood would have "the unusual assignment of working primarily with UNIVAC that night."[43] Collingwood himself took to the airwaves several times in advance of the election to talk about his assignment.[44] He did so enthusiastically.

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[40] Ibid.

[41] Ibid.

[42] Ibid. Cronkite's remarks in this Oct. 16, 1952, interview, are echoed in an interview he gave decades later, from which excerpts were published as "Q&A with Walter Cronkite," by Leslie Jaye Goff, in *Computerworld*), Jan. 25, 1999, http://www.computerworld.com. Cronkite was asked: "How did you feel about using the Univac for election-night coverage?" He replied: "The whole idea was fascinating but slightly appalling. We thought of it more as a gimmick than a tool that would become essential to our coverage. We went to Philadelphia, and here was this computer the size of a living room, and I found it fascinating and mystifying and over my head, but very interesting of course." The online link to this Q&A is no longer active. The same remarks are also reprinted in Leslie Jaye Goff, *Get Your IT Career in Gear! Practical Advice for Building a Career in Information Technology* (Berkeley, Calif.: Osborne/McGraw-Hill, 2001), 21.

[43] "CBS-TV to Use Giant Electronic 'Brain' Election Night," press release, CBS, Oct, 14, 1952, CBS-AS.

[44] These included at least two radio broadcasts: Charles Collingwood, "Report to the West," radio scripts, Oct. 15 and 22, 1952, Box 5, Folder 12, Collingwood Papers, WHS. Collingwood also described his and UNIVAC's upcoming tandem election-night role during at least one television broadcast: "Univac to Help CBS On Election Night," transcript of television broadcast by Charles Collingwood over WCBS-TV, New

In his Oct. 15 script for *Report to the West*, a CBS radio news program, Collingwood described the UNIVAC-CBS plan at length.[45] But he opened first with a dramatic flourish and a description of the problem in need of solving before introducing the proposed solution:

> We've had a big secret around the CNS newsroom – Project X – but now it's out. On election night we're going to try something new. You know what it's like as the results begin to come in – somebody starts rattling off a lot of figures… You can't make any sense of it for hours, and even then some bulging brained commentator comes on to remark that its all going to be different when the returns start coming in from the rural areas. You can sit up for hours before you get any clear idea of what's going on.[46]

After poking fun at unnamed CBS vice-presidents whom he presumed did some thinking of their own to come up with the solution, he announced that the "secret" was that "the Remington Rand people are going to let us use Univac, a prodigious monster of electronic thought."[47] Collingwood let it be known that he had been assigned to consult with UNIVAC and share the results with the audience. "I'm looking forward to it," he said, "because I've always believed that there's a mathematical basis to politics, and Univac can do in his head in five seconds what it would take 50 or 60 mathematicians with slide rules and adding machines to do in a couple of hours."[48] Collingwood used anthropomorphic images throughout the broadcast to aid his audience in understanding

York, and the CBS Television Network, 9:45 a.m. [approximate time], Oct. 28, 1952, transcribed by Radio Reports, Inc., for Remington Rand, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[45] Collingwood, "Report to the West," Oct. 15, 1952, WHS.

[46] Collingwood, "Report to the West," Oct. 15, 1952, WHS. The ellipses here indicate my redaction of material; Collingwood's own scripts contained other frequent ellipses to indicate pauses; for clarity, these are not reproduced in quotations from his scripts here and below.

[47] Ibid.

[48] Ibid.

the machine. "In private life he is a retiring bureaucrat, providing the census bureau and other government branches with statistics," but on election night, said Collingwood, "he'll come into his glory."[49] The methodology of comparison to past partial returns from specific geographic areas was explained, and the plan to get hourly predictions. The journalistic imperative was addressed – the goals were not just clarity and understanding, but said, Collingwood, "if it works, we should know earlier than ever before who the winner will be." [50] In fact, he said, as the UNIVAC is "crouched in his corner in Philadelphia, lights going on and off as he ponders the results," it will be "quite possible that UNIVAC will be the first one in the country to know who the next President will be." [51]

Collingwood also sounded a theme that he would repeat in the run-up to the election and right into election night: that the "electronic marvel" had been programmed to detect errors when fed inaccurate data, such as a misspelled county name. "If it doesn't work," he asserted, "it won't be UNIVAC's fault." [52] Here was a trope – a conscious comparison of human and machine – that would play out before, during, and after the election. And without explicitly stating the comparison of journalist and machine, the UNIVAC had been credited with superior abilities in clarity, speed, and now accuracy. "I tell you it's a little uncanny," Collingwood would tell is audience. "I'm a little scared of

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[49] Ibid.

[50] Ibid.

[51] Ibid.

[52] Ibid.

the thing. I don't know whether on election night UNIVAC is going to be working for me, or I'm going to be working for him." [53]

The following week, on Oct. 22, Collingwood again devoted his *Report to the West* script to the UNIVAC, which he had visited earlier in the day on a trip to Eckert-Mauchly facility in Philadelphia to work on plans for the broadcast. And again, the man-and-machine trope was in play. Reminding the audience of the "mechanical brain" described a week earlier, the self-effacing Collingwood said "he and I are going to work together on election night – he's going to do the thinking; I am going to do the talking."[54] He again described the machine, the theory behind using it, and the plan. He said there were some things about that plan that "we're sort of keeping under our hat," but he gave a clue: that the UNIVAC might be able to predict the vote in the West before the polls were closed and before the counting there started. [55] Collingwood returned to the theme of UNIVAC's infallibility – saying "he won't be the one to make a mistake," and "he just can't make a mistake" – but there was just a little more qualification to his characterization. [56] Because the UNIVAC is "a chap of absolute mechanical honesty" and "will admit that he might be wrong" – and is "a gambler at heart" – the prediction would be expressed along with the odds that it is correct. [57] Beyond that, while the Remington Rand team possessed "a lot of faith not only in their mechanical brain, but in

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[53] Ibid.

[54] Collingwood, "Report to the West," Oct. 22, 1952, WHS.

[55] Ibid.

[56] Ibid.

[57] Ibid.

the method that's going to be used," he said, "even they admit that it may not work."[58] The issue in that case would be human error of some sort, in making assumptions, in data entry, in "factors which we haven't taken account of."[59] He made clear that they – and he – had a lot riding on that not happening.

It was clear from Collingwood's remarks that in both camps, there was awareness that the public exposure on election night could cut both ways. A few days later, however, Collingwood made no mention of those concerns when he appeared on CBS television to promote the election-night broadcast, including footage of the UNIVAC in action. "The thing really works," he told the audience. "It works so well it scares me."[60] And he made good on Mickelson's earlier assessment that using the UNIVAC was promotable. Generating results "faster and more accurately than is humanly possible," the UNIVAC, Collingwood reiterated, could be the first to know the winner on election night. "As soon as Univac tells me," he promised, "I'll tell you."[61] Whatever reservations some at CBS might have had, this potential for excitement was the public face of CBS's promotion of the computer plan right up to election day, when it was articulated in newspaper ads proclaiming that "returns and predictions" would be made on the television network by the "new 'magic brain,' UNIVAC."[62] Local stations also sought to

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[58] Ibid.

[59] Ibid.

[60] "Univac to Help CBS On Election Night," transcript of television broadcast by Charles Collingwood over WCBS-TV, New York, and the CBS Television Network, 9:45 a.m. [approximate time], Oct. 28, 1952, transcribed by Radio Reports, Inc., for Remington Rand, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[61] Ibid.

[62] "Starting at 8 Tonight See Your Vote Count," advertisement, the *New York World Telegram and Sun,* Nov. 4, 1952, 10; "Starting at 8 P.M. and all through the night," advertisement, *Washington Post*, Nov. 4, 1952, 15.

attach themselves to the same promise, as in Baltimore, where WMAR-TV made an appeal to viewers with this pitch: "A ROBOT COMPUTER WILL GIVE CBS THE FASTEST REPORTING IN HISTORY."[63]

NBC and the Monrobot

As at CBS, the precise origins of NBC's plan to use a computer on election night are not specified in the documents located for this study. But records do reveal that the arrangement between NBC and the Monroe Calculating Machine Company to employ the Monrobot on election night was worked out before CBS and Remington Rand went public on Oct. 14 with their collaboration. And as at CBS, NBC positioned the Monrobot in promotional materials as a novel and significant feature of the network's upcoming election-night performance.

NBC's plans for the 1952 conventions and for election night began taking shape before the start of the year and were announced in the *New York Times* on New Year's Day.[64] The corporation sponsoring the convention and election coverage was to be Philco, at a cost of $3,800,000. Here was another battle shaping up for the campaign season, which would feature more than contests between candidates and between networks: Philco's rival, the Westinghouse Electric Corporation, had announced a few days earlier that it would be sponsoring the convention and election coverage on CBS, and ABC would announce later that Admiral would be sponsoring the coverage on that

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[63] "Fast—Authentic Local & National Election Returns on Channel 2," advertisement, *Baltimore Sun*, Nov. 4, 1952, 8.

[64] "N.B.C. Set to Cover '52 Political Drive; Philco Is $3,800,000 Spomsor in 100-Station TV-Radio Link, Starting with Conventions," *New York Times*, Jan. 1, 1952, 30.

network. One arena in which the three sponsors competed was in the very manufacture of television sets, and it was certainly on Philco's radar that convention and election coverage would reach a rapidly widening circle of potential consumers. Philco's executive vice president was quoted on the subject: "So rapidly has television grown that this year it is estimated that 18,000,000 homes will be equipped with television receivers by election day, with an estimated 70,000,000 to 75,000,000 persons seeing and hearing the candidates in action."[65]

NBC's plans were not light on roles for new technology. Among the special features touted in the network's announcement was the planned use of a "walkie-talkie-lookie" – a portable camera to be rolled out for the first time in covering the major party conventions, both of which would be held in Chicago in July.[66] But the use of a computer on election night was not yet part of the array of devices that NBC would be employing to get the job done and to get noticed for doing it.

Plans for election night began ramping up in early August. A memo between top NBC executives noted that "It is not too early for us to start planning immediately for our election night coverage."[67] And the election-night programming for NBC's television and radio networks was not the first item mentioned in that memo, which went to Sylvester L. "Pat" Weaver Jr., vice president over both broadcast operations. Reflecting a longstanding part of election-night culture nationwide was the memo's opening: "As

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[65] Philco Executive Vice President John H. Carmine, cited in "N.B.C. Set to Cover '52 Political Drive…"

[66] This portable miniature camera with a back-pack transmitter, featuring a new RCA 6198 Vidicon Camera Tube, would ultimately be nicknamed the "Walkie-Lookie" when rolled out for the conventions; A.E. Ohler, "The 'Walkie Lookie' – A Miniaturized TV Camera Custom Built for Use by NBC at National Political Conventions," *Broadcast News,* RCA Engineering Products Department, September-October 1952, LAB.

[67] Charles C. Barry, memo to Sylvester L. Weaver Jr., Aug. 8, 1952, Box 121, Folder 29, Papers of Sylvester L. Weaver Jr., NBC Records; WHS.

you know, it has been the tradition of NBC to build an elaborate studio presentation

which, while primarily for the service of the two networks, has also been used to invite

important people to our studios to share in the excitement of an election night."

As the planning progressed on all fronts – news, image-making, and public

relations – NBC crafted a three-page press release on Sept. 12 about its election-night

arrangements, packed with details and heavy on superlatives.[68]   The Monrobot was not

yet mentioned. And although the headline and first sentence boasted of an "electronic

brain" to be used, the context – and subsequent releases – make clear that this was not a

reference to a computer.[69] Rather, it was a term that NBC would apply at that point in its

planning – but not closer to the election – to refer to a custom-designed arrangement of

equipment for aggregating and displaying election returns.

An article in the October issue of *Radio Age* – a publication of the Radio

Corporation of America, NBC's parent corporation – provided more detail about the

special election-night innovation referenced in the press release, but without calling it an

"electronic brain."[70] The account of "Operation Election Night" began this way: "With

batteries of television cameras, an augmented corps of radio and television commentators

and eight almost-human computing cash-register-like machines developed especially for

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[68] "Most Elaborate Radio and TV News Center – With 'Electronic Brain' – to Be Installed by NBC for Election Night Headquarters; 500-Man Staff to Provide Around-the-Clock Returns," press release, NBC News, Office Files, NBC Records; WHS. A small part of the press release was also excerpted in *NBC Chimes*, a publication for network employees: "NBC to Install 'Brain' for Election Night," *NBC Chimes*, October 1952, LAB.

[69] The release indicated that three companies were taking part in the efforts to produce this system for vote aggregation and display. One was National Cash Register. A second was RCA, parent company of NBC. And the third was listed as the American Totalizer Company, perhaps a reference to American Totalisator Company, a maker of large tote boards.

[70] "Operation Election Night," *Radio Age* 11, no. 5 (October 1952), 3-4, David Sarnoff Library, Princeton, N.J.

the occasion, ready to go, the National Broadcasting Company has completed its plans

for the most elaborate radio and television news coverage of any national election returns

in the history of broadcasting."[71] These machines were said to have had their "genesis" a

few weeks earlier, when Charles H. Colledge, a manager of public affairs for NBC,

approached the National Cash Register Company with a request for a "fast, visual means

of presenting tallies to the television audience." NCR's head of product development,

Charles L. Keenoy, reported back with a plan in less than 10 days, according to *Radio*

Age. Eight "super-sized cash register machines" were to have various functions:

tabulating and displaying the presidential vote in each state and the percentage of vote

counted, giving the national vote count, and displaying the standings in Congressional

races.[72] The design was to allow television cameras to broadcast the numbers directly to

viewers.

The October *Radio Age* article made no mention of the Monrobot. But plans were

well enough formed by early October to turn up in the minutes of an NBC election-

planning meeting on Oct. 10 – before news accounts about the UNIVAC-CBS plan –

with this note: "Electronic brain is being supplied by Monroe" and is "called

Monrobot."[73] Also noted was this: "Answers come out on tape and will have to be

interpreted by PhD."[74] The Monrobot was to be used for trends, while more ordinary

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[71] Ibid.

[72] Ibid.

[73] "Minutes of Election Meeting held 4PM Friday, October 10, 1952," Box 314, Folder 33, Joseph O. Meyers Papers, NBC Records, WHS. No mention of Monrobot appears in minutes of earlier election-planning meetings in this file, which are from the following dates in 1952: Sept. 16; Sept. 17; Sept. 22; Sept. 24; Sept. 25; Sept. 30; and Oct. 3. There is a reference in the Oct. 3 minutes to the next meeting being scheduled for Oct. 7, but the next set of minutes in the file are from Oct. 10.

[74] Ibid.

office equipment from companies including Monroe would be involved in tabulating the votes and figuring the percentage of election districts with completed vote counts.

Richard LaManna, then 25, had been working on the development of the Monrobot at the time, having come to Monroe after military service, where he was schooled in electronics, and after graduating in 1951 from the University of Maryland, where he studied electrical engineering. Asked about the origins of the NBC-Monrobot plan, LaManna said he was not privy to just how the idea first surfaced. But he recalls coming to work one day at some point before the election – he has a memory of the weather being warm – and being told that he would be joining two others on a train ride into Manhattan. One was William Burkhart and the other was their boss, E. J. Quinby, and he recalled that their destination was the offices of David Sarnoff, head of NBC's parent company, RCA, at Rockefeller Center. LaManna had the impression that Quinby knew Sarnoff from "way back when."[75] In fact, Quinby, like Sarnoff, had been a seagoing wireless operator back in the early years of wireless telegraphy and had, like Sarnoff, worked for the American Marconi Company. Affection for those days was still on display when LaManna arrived at Monroe: he soon discovered that the Morse code he heard being tapped out on payday was coming from Quinby, calling the employees under him in by name – in Morse code – to collect their wages. In addition to the Marconi connection, Quinby went to work at RCA in 1922 in research and development, and he stayed until World War II. In a 1975 memoir on his early years, Quinby wrote that "David Sarnoff, who had been one of our fellow seagoing radio telegraph operators,

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[75] Richard LaManna, telephone interview by the author, Dec. 14-15, 2004.

enjoyed a meteoric rise to become president of RCA."[76] And when Sarnoff's RCA

acquired the Victor Talking Machine Company in Camden, N.J., Quinby was among

those "shifted down to Camden," he wrote, "in the role of 'shock troops' to take over the

old Victor establishment."[77] Whether – or how well – Quinby and Sarnoff knew each

other is not discussed. And what role Sarnoff might have had to play, if any, in NBC's

election-night arrangements is not clear, either, from available records. He is not

mentioned in minutes of the meetings an NBC committee planning election coverage, but

there is a photograph of him at NBC studios on election night.[78]

LaManna recalled that when the three men from Monroe arrived at Rockefeller

Center, he and Burkhart sat in a waiting room while Quinby went into Sarnoff's offices

for a meeting.[79] And LaManna recalls being told, when Quinby emerged, that the

Monrobot would play a role in NBC's election-night broadcasting of election returns.

LaManna also recalls expressing some concern: work on the Monrobot, he said, was still

underway. But the plan to use the Monrobot was set.

On Oct. 14 – the day CBS went public with the election-night role for UNIVAC –

the fact that CBS and NBC were now locked in a competition over computers was the

lead item at NBC in the minutes of that day's election-planning meeting: "Discussed

electronic brains – CBS's as compared to ours, with play by play description from C H

Colledge, who stated that Monroe people claim the Monroe equipment is, without

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[76] Quinby, *Ida Was a Tramp*, 248.

[77] Ibid., 248-249.

[78] Photograph of David Sarnoff and Franklin Folsom, RCA president, at NBC studios, Nov. 4, 1952, David Sarnoff Business 5, 1952-1953, 20, David Sarnoff Library, Princeton, N.J.

[79] Richard LaManna, telephone interview by the author, Dec. 14-15, 2004.

exception, the best and fastest available."[80] That such a claim about speed and capability,

as exaggerated as it was, could be taken at face value is evidence, if nothing else, at how

little computers and their distinctions had penetrated public consciousness in the fall of

1952. As the discussion continued, it is also apparent that the election-night

methodology to be used with the Monrobot had yet to be finalized:

> Mr Colledge suggested the possibility of working out a system similar to
> that used in figuring standings of baseball teams during the last month of
> baseball season – when certain teams are eliminated from race
> (mathematically impossible for these teams to win) before final game is
> played.[81]

With just three weeks to go until the election, it was also clear that precisely how the

Monrobot and the NBC news staff would interact had not been worked out until this

meeting, when one of NBC's best-known and most-experienced newsmen was be tapped

for the job and switched from a different election-night assignment:

> Decided that one man should work closely with PHD; that this man should
> be good deal more than newsman and capable of analyzing every vote.
> MORGAN BEATTY selected – unanimously. Mr Colledge to advise Mr
> Beatty accordingly.[82]

The Monrobot came up one more time in the memo – reflecting, though not explicitly so,

one major difference between the CBS and NBC plans. The giant, room-sized UNIVAC

could not be moved from its home base in Philadelphia. But the Monrobot was, for 1952,

portable, with its main operating unit occupying a space about the size of an office desk

and weighing about half a ton.[83] The Oct. 14 memo noted that the Monrobot – and

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[80] "Minutes – Election Meeting – October 14th," Oct. 14, 1952, Box 314, Folder 33, Joseph O. Meyers Papers, NBC Records, WHS.

[81] Ibid.

[82] Ibid.

[83] The Monrobot III was listed as weighting 1,000 pounds in a 1955 survey of computers done for the Army's Ballistic Research Laboratory at Aberdeen Proving Ground in Maryland: Martin H. Weik, *A*

Monroe calculating machines to be used for other election-night duties – would be delivered to the NBC election studios between 9 and 10 a.m. on Saturday, Nov. 1. A first rehearsal for election night was thus scheduled to begin at 11 a.m., with others to be held on that Sunday and Monday before the Tuesday election.

The day after that meeting, Oct. 15, news of the CBS plan to use a computer on election night appeared in newspapers around the country. NBC joined the battle of the "electronic brain" press releases on Oct. 16 with one of its own: "Meet Mr. Mike Monrobot, 'Electronic Brain,' Who Will Compute Election Count for NBC Radio and TV; Mechanical Wizard Can Tackle Many Problems at Once."[84] On election night, NBC's radio and television audience, it said, would "meet Mike Monrobot, NBC's 'electronic brain,' for the first time." The release went on to tout – with more showmanship than accuracy – the machine's purported qualifications: "Mike is the fastest – not the biggest – electronic computer in the country. From his place in one corner of NBC's election night headquarters (studio 8-H, Radio City, New York), Mike will help predict and prove the outcome of Presidential and state elections at the earliest possible hour."[85] Being met, then, was a traditional imperative for election-night journalism – speedy analysis. The computer was also to help its journalistic counterparts both by keeping them "constantly informed on … trends" around the country and by telling them "when a 'doubtful' state can be put in the 'sure' column for one party or the other long

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Survey of Domestic Electronic Digital Computing Systems, Ballistic Research Laboratories Report No. 971, December 1955, online at http://ed-thelen.org/comp-hist/BRL.html. A standard configuration of the elements of the UNIVAC was listed as taking up 1,000 square feet and weighing almost 15 tons, not including air conditioning.

[84] "Meet Mr. Mike Monrobot, 'Electronic Brain,' Who Will Compute Election Count for NBC Radio and TV; Mechanical Wizard Can Tackle Many Problems at Once," press release, NBC, Oct. 16, 1952, NBC Trade Releases, LAB.

[85] Ibid.

before final vote counts are known." [86] There was even a suggestion, though not said directly, that the computer might serve as a replacement for – or at least an equivalent to – some human functions on election night: "In effect," the release claimed, "Mike will analyze national voting trends the way local newspapers and broadcasting analyze the trend of voting in their areas."[87] Still, just as the NBC election-night managers had suggested in their internal memo two days earlier, the computer was not to be left to its own devices without monitoring by a flesh-and-blood journalist: "Morgan Beatty, noted news commentator, will be beside him to interpret the figures and the calculations to the viewing and listening audience."[88]

NBC must have known that the Monrobot might not be very exciting to look at when compared to what might be expected of the UNIVAC. The latter was not named – nor was CBS – but the context suggests the Remington Rand computer was on NBC's radar as a target to take head on. In the release, three strategies are evident to make the Monroe machine attractive to potential viewers by developing a compensatory persona for "Mike" to go along with his human name. One involved virtue, the second involved power, and the third involved sex. The virtue was that "Mike's" diminutive size made "him" portable and innovative:

> Mike looks like an office desk with an adding machine and an electric
> typewriter on top. Unlike earlier style computers that bulk so large that
> they can hardly be moved from the place where they were originally built,
> Mike will ride over from New Jersey and be installed in NBC election
> headquarters a few days before Nov. 4. [89]

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[86] Ibid.

[87] Ibid.

[88] Ibid.

[89] Ibid.

The power element was what viewers could not see underneath Mike's modest exterior:

> Mike's makers, the Monroe Calculating Machine Company of Orange, N.J., describe him as a 'general purpose, sequence-controlled, digital computer developed over the past three years.' Mike's real name is Monrobot and naturally he has a great head for figures. His electronic gray-matter perks so fast that Mike needs a cooling system to keep him from working up a sweat. He weighs 1000 pounds and won't lose an ounce despite constant effort all night long.[90]

And as for "all night long," there was the matter of sex appeal. In case viewers weren't convinced that Mike provided exciting viewing, NBC appears to have adopted a stock element that shows up throughout this era in magazine and publicity photos for electronic equipment of all sorts: the girl.[91] The NBC trade release said this of "Mike":

> He's fond of pretty girl secretaries, who can be readily trained to operate him, but on election night Mike will have a beautiful woman Ph.D. for his companion. The learned doctor will establish the mathematical equations necessary to figure the trends of various election races and stuff this information into Mike's maw. A brief digestive whir and tap-tap-tap at 600 figures a minute and out will come the answers typed automatically…
>
> … Like any well-oiled brain, he makes no noise and needs only a bit of electricity for his nourishment, and perhaps a wee bit of affection from his operator. That keeps him figuring indefinitely.[92]

Here, again, was the "Ph.D." – and its use is revealing in several ways. Emphasis on the "beautiful woman" who was also a "learned doctor" suggests that this, too, was another wonder – a surprise to a 1952 audience, perhaps, like the notion of a "brain" that's a machine – that might be used to attract an audience. But in addition, she was not a Ph.D.

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[90] Ibid.

[91] These are ubiquitous in that era. See, for example, the drawing of a bikini-clad woman, bending over to touch her toes, in an ad for "Flexible Improved New VARGLAS SILICONE Tubing and Sleeving" in *Electronics* 25, No. 12 (December 1952), 198. Or consider this caption for a profile shot of a young woman watching as a man in coat and tie rests his hand on a piece of cutting-edge equipment: "PERT CLEVELAND LASS gets pointers on an electron microscope at the National Instrument Show…" It ran with "Instrument Makers Stabilize Lines," *Electronics* 25, no. 10 (October 1952), 20.

[92] "Meet Mr. Mike Monrobot," press release, NBC, Oct. 16, 1952.

at all. Her name did not appear in the release and would be mentioned just briefly on air

on election night. She would be named – Marilyn Mason – in a day-after release from

NBC that described her as a "photogenic Ph.D. in mathematics" who "guided" the

Monrobot.[93] But in its Nov. 17 issue, *Newsweek* would, in a light-hearted account, reveal

that this "beauteous brunette mathematician" who worked for Prudential Insurance

Company had been given a "press agent's doctorate."[94]

The Oct. 16 NBC release hinted at the kind of work the Monrobot might be called

upon to do on election night, making a claim about what had already been stored away in

"Mike's magnetic memory" – "hour-by-hour vote totals for every state and for every race

– Presidential, gubernatorial and congressional – of the 1948 elections."[95] These were to

be used to "simplify complicated comparisons and make accurate forecasting possible

during NBC's all-night report."[96] Eight days later, on Oct. 30, NBC issued another trade

release titled: "NBC Radio and TV Networks, With Staff of 250 Plus 'Electronic Brain'

and Mobile Units, to Bring Election Returns to Nation; Top Commentators to Analyze

Results."[97] The computer appears as an element in NBC's comprehensive plan to

convince viewers that the network had a competitive edge. In addition to such special

arrangements as a chartered airplane to transport election-day film, the release quoted a

network executive as saying: "The Monrobot, our electronic brain, is raring to go. He's

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[93] "NBC Brings the Nation Complete, Accurate Results of Elections With Staff of 300 for Record Coverage On Radio and Television," press release, NBC, Nov. 5, 1952, NBC Trade Releases, LAB.

[94] "The Machine Vote," *Newsweek*, Nov. 17, 1952, 63-64.

[95] "Meet Mr. Mike Monrobot," press release, NBC, Oct. 16, 1952.

[96] Ibid.

[97] "NBC Radio and TV Networks, With Staff of 250 Plus 'Electronic Brain' and Mobile Units, to Bring Election Returns to Nation; Top Commentators to Analyze Results," NBC Trade Releases, Oct. 30,1952, LAB.

stuffed full of information that will help him compare this year's Presidential election

with 1948… In this all-electronic election we'll be out in front again with accurate and

rapid reports."[98]

NBC also engaged CBS in the pre-election publicity battle not just with press

releases, but with on-air promotions and newspaper ads. On Oct. 23, for example, an

NBC radio program discussing the upcoming election provided a rundown of the news

staff who would be reporting and providing analysis on election night, and followed it up

with this:

> Earlier, we gave you a list of the NBC newsmen who'll be reporting to
> you on election results. But you need more than men to cover the myriad
> facts that can predict a trend. Well, NBC has taken care of that, too. The
> fastest electronic brain will be computing the results, totaling, analyzing.
> The job of registering and deducting will be done with lightning speed and
> accuracy by the Monrobot, a marvelous new electronic computer,
> especially designed by the Monroe Calculating Machine Company. The
> individual returns will be fed into the Monrobot, and then this result will
> be compared with the figures of the 1948 returns. With this, the nation's
> fastest electronic computer at work, NBC will be consistently ahead with
> the all-important election trends. Remember, in national affairs, America
> votes for NBC.[99]

Meanwhile, an NBC newspaper ad boasted that "500 NBC experts, 1,000 newsmen in

NBC stations, and the Monrobot – America's fastest electronic brain – will bring election

results, trends, and interpretations to you as quickly as the votes are counted."[100]

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[98] NBC also kept its own employees informed about the Monrobot, which was touted in a network newsletter: " 'Mike Monrobot' ... The Brain," *NBC Chimes*, November 1952, Library of American Broadcasting, College Park, Md.

[99] Election Preview, NBC Radio, Oct. 23, 1952, No. 317-318, Disc 45A, Script and Recording Library, NBC Records, WHS.

[100] See, for example, "Follow the Returns on NBC," advertisement, *Chicago Daily Tribune*, Nov. 4, 1952, 10; *New York Times*, Nov. 4, 1952, 52; and the *Washington Post*, Nov. 4, 1952, 30. The notion of mechanical devices mimicking real life had company in other ads on the same page in the *Chicago Daily Tribune*: The newspaper was running a subscription drive that could lead to "twin walking dolls" for girls and an electric train with a remote controlled boxcar trainman for boys; "The Chicago Tribune Gives You These Valuable Gifts at No Cost to You," advertisement, *Chicago Daily Tribune*, Nov. 4, 1952, 10.

Monroe got in on the publicity battle, too, running ads around the country in the

run-up to the election. Here was a chance to tout other types of Monroe office equipment

that would also be used on election night – and that were the company's money makers at

a time when computers were not yet selling in volume. These ads addressed the

imperative of speed – not by making comparisons between the Monrobot and other

computers, but by proclaiming that the audience would see figures "digested in a

twinkling by the unerring electronic brain of Monroe's mathematical marvel – the

Monrobot and many other Monroe calculators." [101] The mutual interests of the

equipment's manufacturer and the network were made clear: The audience seeking

election returns was promised this: "You'll see and hear them faster because NBC is

using Monroes."[102] Even companies with only a tangential connection to the computer-

television alliance joined in the fray. A few days before the election, a major utility

company, Con Edison, ran newspaper ads featuring a staged photograph of newsman

Morgan Beatty, with vacuum tube in hand, leaning over the Monrobot with its top open,

staring intently at the array of electronic components and wires inside. What was Con

Edison's connection? As a power company, its sales of electricity stood to grow right

along with an expanding market for television sets. Election night was a prime

opportunity to make the case for both, which is what the company did in this caption:

> Election "Robot." On election night, this electronic "brain" will help NBC
> bring the returns to you with lightning speed. Morgan Beatty, famous
> commentator, views intricate innards that make Monrobot one of the
> country's fastest computers. It's another reason for seeing the election on

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[101] The Monroe ad "Many Happy Returns of the Day" appeared the day before the election in newspapers around the country, including the *Chicago Daily Tribune* (p. B4), the *Los Angeles Times* (p. 13), the *New York Times* (p. 20), and the *Washington Post* (p. 2).

[102] "Many Happy Returns of the Day," advertisement.

TV. And remember: 2 hours of TV viewing costs only 1¢ for electricity. Con Edison electricity is your biggest household bargain.[103]

Philco, which would be sponsoring the NBC broadcast, also ran newspaper ads boasting of a first – the "WORLD'S FIRST," in fact, shouted in capital letters – and a "sensational innovation in news reporting": "ELECTION RETURNS … BY ELECTRONIC TABULATOR."[104] The ad, which also carried thumbnail photos of five of NBC's "top reporters" and the names of three others, invited the radio and television audience to hear and see "the fastest, most exciting, most complete election returns in history with the fabulous Electronic Tabulator – the electric brain that will bring you split-second vote tabulations and estimates." The ad did not mention Monroe or the Monrobot, and there is some ambiguity about just what equipment this ad was meant to describe. On NBC radio on election night, the anchor, Merrill "Red" Mueller, would refer to results from the "Philco tabulator" when giving national and state-by-state returns. But Philco did not manufacture such a device and the Monrobot was not used for tabulation, but for analysis. Nor is there any mention of a "Philco tabulator" in the NBC network television broadcast – originating from the same large studio as the radio broadcast – though the Philco logo is ubiquitous, including one announcing "Philco Election Headquarters," which is how both the announcer and the anchor referred to operation at Studio 8-H on election night. And at the end of the night, thanks are given to three manufactures of equipment for toting up numbers – National Cash Register, Monroe, and

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[103] "Election 'Robot'," advertisement, *New York Herald Tribune*, Oct. 30, 1952, 18. This clipping was also pasted into a scrapbook of news coverage kept by the Monroe Calculating Machine Company. The scrapbook page notes that this ad also ran in at least two other New York newspapers, the *Daily News* and the *Journal-American;* records of the Monroe Calculating Machine Company, MSB.

[104] "TV … Radio Tonight," advertisement, *New York Times*, Nov. 4, 1952, 36. This ad also appeared in other newspapers around the country, including the *New York World-Telegram and Sun*, Nov. 4, 1952, 10; and the *Washington Post*, Nov. 4, 1952, 31.

the Victor Adding Machine Company. Regardless of just what Philco's pre-election ad was referencing, the theme of touting election-night innovation was familiar – both in the run-up to Nov. 4 and in the culture of election-night journalism.

IBM's Ambiguous Role

If IBM engaged in significant efforts to promote its own upcoming involvement in election-night news reporting, these have not left much of a trace. IBM is generally absent from accounts of election-night broadcasting plans that appeared in published wire-service dispatches, newspaper stories, the columns of television critics, and trade publications for journalism and broadcasting.[105] One exception was *New York Daily News* television writer Ben Gross, who mentioned the upcoming use of "special International Business Machines" to "aid in making lightning calculations" at ABC.[106] But in other instances, IBM is not named even where there were occasional references to ambiguously nicknamed devices to be used at ABC. The *Chicago Daily Tribune* television writer, for example, followed a mention of UNIVAC and Monrobot with a mention of "something frankly called the Monster over at ABC."[107] *Variety* reported that CBS and NBC would use "automatic electric 'brains' which will spot trends" – and named the UNIVAC and Monrobot – but referred only to "a 'Robot Reporter' and a 'Trend Meter'" that ABC would use, with "carbon copies" in New York, Chicago, and

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[105] Sources checked for any evidence of IBM promotion of its role included the ProQuest Historical Newspapers database and the NewspaperArchives.com database, as well as microfilm of several major urban newspapers at the beginning of election week, when widespread ads and coverage did appear for UNIVAC's role on CBS and Monrobot's role on NBC.

[106] Ben Gross, "Televiewing and Listening In with Ben Gross," New York *Daily News*, Nov. 3, 1952, 79.

[107] Larry Wolters, "Television News and Views," *Chicago Daily Tribune*, Oct. 27, 1952, E6. By the time of

Los Angeles, as that network's approach to providing "visual means of tabbing the

trends."[108] Typical accounts of the upcoming use of "electronic brains" in the networks'

election-night broadcasts did not extend beyond UNIVAC on CBS and Monrobot on

NBC.[109]

Nor was IBM's role promoted or even mentioned in newspaper ads in the way

that the Monrobot and UNIVAC were. ABC's ads touted the reporters and commentators

the network would use on election night but made no mention of IBM.[110] What's more,

just two days before the election, *Philadelphia Inquirer* television writer Merrill Panitt

published a column about the networks' advance publicity battle. This included ABC's

dismissive references to the computer-analysis plans cooked up by its competitors:

> Not to be outdone by the other networks' press releases on
> electronic brains, ABC has issued a handout declaring that on election
> night, "the trends, percentages, comparisons, analyses, and above all, the
> returns, will be reported over the ABC radio and TV networks by not one
> but 40 of the fastest, most accurate brains known to human science." After
> describing the brains as weighing approximately 53 ounces each and being
> powered by tiny and manifold electrical impulses, ABC confesses that
> they belong to such gentlemen as Walter Winchell, Drew Pearson, Elmer
> Davis and other ABC staffers.[111]

New York World-Telegram and Sun television writer Harriet Van Horne reported on the

same statement, observing that ABC "sniffs grandly at the opposition's mechanical

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[108] "Radio-TV Set For '99% Coverage' On Election Nite," *Variety*, Oct. 29, 1952, 1, 44.

[109] These include: an Associated Press item by Wayne Oliver (published as "This Week on Air" in *The Sun*, Baltimore, Md., Oct. 26, 1952, L19); "TV Nets Plan Full Election Coverage," *Washington Post*, Nov. 2, 1952, L6; "Univac & Monrobot," *Time*, Oct. 27, 1952; Bill Henry, "By the Way with Bill Henry," *The Los Angeles Times*, Nov. 4, 1952, A1; Larry Wolters, "Television News and Views," *Chicago Daily Tribune*, Nov. 3, 1952, B12.

[110] "Starting at 8 P.M.," advertisement, *New York Times*, Nov. 4, 1952, 37.

[111] Merrill Panitt, "Networks' Full Resources Tuned for Election Night," *Philadelphia Inquirer*, Nov. 2, 1952, 23 and 28. Within months of the election, Panitt became the first managing director of *TV Guide* and was later its editor; "Merrill Panitt, 76, Ex-TV Guide Editor," obituary, *New York Times*, March 31, 1994.

marvels."[112] Such sentiments mirrored those noted in an earlier *Time* magazine item

announcing the use of the Monrobot and the UNIVAC and reporting that ABC was

having none of it: "Says ABC's News Director John Madigan, professing a disdain for

such electronic gimmicks: 'We'll report our results through Elmer Davis, John Daly,

Walter Winchell, Drew Pearson—and about 20 other human brains.'"[113]

Records that have turned up to date do not make clear why IBM itself did not do

more to call attention to its role in the run-up to the election. And ABC's election-night

headquarters were not the only place that IBM would play a role on Nov. 4 in digesting

election returns. After the election, IBM published an account in an in-house magazine of

the various places that its "batteries of IBM Electronic Calculators and high-speed IBM

Accounting Machines" were used on election night in connection with the reporting of

returns.[114] These included installations at ABC's Studio 1 in New York, site of the

network's national broadcast, and another in the city room of the *New York World-*

Telegram and Sun, where ABC's local station, WJZ-TV, would be broadcasting. IBM

service bureaus in more than 20 cities would be listed after the election as making

equipment and staff available to wire services and newspapers as well as government

agencies for election-night work. The *Hartford Courant* and the Newspaper Printing

Corporation, which handled joint business operations for the *Tulsa World* and *The Tulsa*

Tribune, arranged help from IBM offices in those cities. The Associated Press was said to

have lined up help from IBM in a number of cities: Washington, D.C.; New Haven;

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[112] Harriet Van Horne, "Ballot Brains Train on Election Picture," *New York World-Telegram and Sun*, Oct. 31, 1952, 25.

[113] "Univac & Monrobot," *Time*, Oct. 27, 1952.

[114] "IBM Machines Play Key Parts in Elections," *Business Machines*, Nov. 18, 1952, IBM Corporate Archives, Somers, N.Y.

Albany; Charleston, West Virginia; Indianapolis; Chicago; Minneapolis; Omaha; St.

Louis; Little Rock; Miami; New Orleans; and San Francisco. The United Press was also

said to have enlisted IBM service bureaus in some of the same cities: Little Rock;

Minneapolis; and San Francisco. And at Lockheed Aircraft in Burbank, California, the

Mathematical Analysis Department was making its IBM installation available for NBC's

reporting on affiliate stations in the West – Los Angeles, San Francisco, Denver, and Salt

Lake City – for analysis of trends to supplement the national broadcast originating from

New York.

Precisely what kinds of IBM equipment were in the mix at all of these venues was

not made clear. The in-house after-the-fact account from IBM does make clear that the

equipment at Lockheed was a Card-Programmed Electronic Calculator. Also known as a

CPC, this was an arrangement of existing IBM machines that was serving in the late

1940s and early 1950s as a transitional technology to carry out some computer-like work

until IBM could get its first true stored-program commercial computers to market.[115] A

publication of the National Machine Accountants Association, *The Hopper*, would later

report that the IBM machines set up at ABC and at the *New York World-Telegram and*

Sun for election night were also Card-Programmed Electronic Calculators.[116] But the item

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[115] Computer pioneer Robert W. Bemer was then working at Lockheed and was involved in programming the CPC there for use with the NBC broadcasting in the West. He mentioned the experience in an account of his time at Lockheed, and said wrote that the programs he built for this broadcast did not involve predictions. Robert J. Bemer, "Lockheed Aircraft – California Division; Computer History Vignettes," http://www.trailing-edge.com/~bobbemer/LOCKHEED.HTM. Bemer passed away in 2004; Steve Lohr, "Robert W. Bemer, 84, Pioneer In Computer Programming," *New York Times*, June 25, 2004. An article that appeared in the *Los Angeles Times* on election day also mentioned, in connection with the NBC broadcast originating locally, that "Lockheed's giant electronic computing machines will be used for lightning fast calculations," but the article did not report the name of the machine's manufacturer, IBM; Walter Ames, "Networks, Local Stations to Use All Facilities Covering Presidential Election Tonight," *Los Angeles Times*, Nov. 4, 1952, 20.

[116] "Electronic Computers Call the Shots on Election Night 1952; Whole Nation Sees Giant 'Brains' in Action," *The Hopper* 3, no. 6 (November-December 1952), 3, CBI.

in *The Hopper* seems otherwise to be drawn from IBM's own after-the-fact account, and that merely refers to the equipment in these places as "IBM Electronic Calculators" – a usual reference at the time to the IBM "604," a device that was also the calculation and programming unit of the CPC. Writing after the fact, IBM described the arrangement at ABC and the *New York World-Telegram and Sun* this way:

> The IBM procedure was substantially the same at the ABC network's headquarters and at the newspaper. IBM Card Punches converted ballots into notations on IBM Cards of the type widely used in business and industry. These cards were then used by IBM Accounting Machines to produce intermediate and final totals, and by the IBM Electronic Calculators to compute percentages of the total estimated vote in each race. The installations at both the ABC headquarters and at the newspaper were manned by skilled IBM personnel.[117]

This account went on to say that the IBM calculators were set up to compare returns from 1952 with "pertinent totals" from previous elections. IBM's after the fact accounts do not make clear precisely what equipment the company was making available in the other venues where it was playing a role in election-night reporting.

It would not be a stretch to speculate that there may have been limited desire at IBM both before and after the election to call a great deal of public attention to the IBM technology to be employed. This electronic calculating equipment was already in wide use but could not compete for excitement with archrival Remington Rand's state-of-the-art UNIVAC, and IBM would not roll out its first true commercial computer, the "701," until after the election. Whatever the reason, the use of IBM equipment of any sort on election night in 1952 has been under the radar in biographical, autobiographical, and

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[117] "IBM Machines Play Key Parts in Elections," *Business Machines*.

historical accounts of the company, its founders, and the evolution of its machines.[118]

Where the election is mentioned in such works, the references are to the use of the

UNIVAC and the perception of IBM's leaders that Remington Rand had scored a public

relations victory.[119]

The approach at ABC is even more puzzling, at least on the surface. IBM

electronic calculating equipment was to play a role at ABC, but as we have seen,

messages put out by the network were decidedly negative about the idea of using

technology to digest election returns. And yet IBM equipment was in the mix both at the

ABC network's Manhattan studio and in the newsroom of the *New York World Telegram*

and Sun, where ABC's local affiliate, WJZ-TV, would be broadcasting. Was there a lack

of clarity in advance about what equipment would be used and how? Or was it sour

grapes, with plans made to use IBM equipment upstaged shortly before the election by

announcements from CBS and NBC about their more cutting-edge machines? Or was

there a difference of opinion at the network? As noted earlier, there was a brief reference

in passing on a radio talk show the day after the election during a discussion of the use of

electronic brains the night before. The speaker was Dorothy Kilgallen, a newspaper

columnist who co-hosted the daily radio show with her husband, Dick Kollmar, and also

served as a regular panelist on *What's My Line?* That CBS television entertainment

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[118] These include: Kevin Maney, *The Maverick and his Machine: Thomas Watson, Sr., and the Making of IBM* (Hoboken, NJ: John Wiley & Sons, Inc., 2003); William Rodgers, *Think: A Biography of the Watsons and IBM* (New York: Stein and Day, 1969); Richard S. Tedlow, *The Watson Dynasty: The Fiery Reign and Troubled Legacy of IBM's Founding Father and Son* (New York: HarperCollins, 2003); Thomas J. Watson and Petre, *Father, Son & Co.;* Cortada, *Before the Computer*; Bashe et al., *IBM's Early Computers*; Pugh, *Building IBM;* Fisher et al., *IBM and the U.S. Data Processing Industry;* and Thomas Belden and Marva Belden, *The Lengthening Shadow: The Life of Thomas J. Watson* (Boston: Little, Brown, 1962).

[119] See, for example: Maney, *The Maverick and his Machine*, 397-404; Tedlow, *The Watson Dynasty*, 186; Rogers, *Think*, 176-177 (footnote 3), 199; Watson and Petre, *Father, Son & Co.,* 228-229; Pugh, *Building IBM*, 159.

program was hosted by John Daly during the same period when Daly was a newsman on

ABC television and radio, and he was featured prominently in ABC's 1952 election-night

broadcasting. It is unlikely that Kilgallen would have confused him with someone else.

Here is what she said, according to a transcript:

> … I know that the network John Daly was on was supposed to
> have one because the first I heard of this he was talking about it and he
> was rather puzzled in advance about what this was going to accomplish
> and I think I told you the story about him – after a 20 minute briefing on
> this by a gentleman at his network who knew all about it he said, "But
> now, when you get all through, what does it do?" And he said, "Well, it's
> going to figure out" – he said the machine was going to figure out by what
> percentage the person who is leading is leading. And John made the
> classic remark, "But I was figuring to do that in my head."
> Well, I don't know how he made out because I didn't actually see a
> photograph of the Univac or – I'll never know what that is called on the
> channel were he was."[120]

In a book published in 1954, *New York Daily News* television critic Ben Gross recounted

the scene on election night 1952 at the Manhattan studios of the three networks, speaking

of "electronic brains" at NBC and CBS but an "entirely different atmosphere" at ABC,

where "it was strictly business," with "no magical machines." He does not mention the

IBM equipment used in connection with the ABC broadcast. He does quote John Daly as

saying: "The old-fashioned pencil and paper, plus political know-how, are still the best

equipment of the political pundit."[121] Gross's source is not cited, but the sentiment

attributed to Daly is consistent with one that appears in a letter Daly wrote in 1956. It

suggests that he remained unconvinced the computer was an appropriate journalistic tool

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[120] "Kollmars Think Univac Made Poor Showing," transcript prepared for Remington Rand, Dorothy and Dick Kollmar, WOR, Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS. Note that an item that appeared in *Electronics* magazine reported that an "IBM calculator was used to calculate percentages as returns were filed" at ABC; "Computers Sweat Out Election results; nonpartisan electronic machines vie with human experts to predict outcome," *Electronics*, Dec. 1952, 14, 16.

[121] Gross, *I Looked and Listened,* 246-247.

for election night. In that letter to the same John T. Madigan who had been in charge of

ABC's 1952 election-night broadcast, Daly noted – in 1956 – that to remain competitive

on election night, "it would appear that I must concentrate on machinery and not

reporting.. It's a hell of a way to do business."[122]

But if IBM and ABC weren't going out of the way to call attention to their mutual

involvement on election night in 1952, and if the top figures at ABC television news were

not fans of "electronic brains" or similar devices, at least two newspapers using IBM

equipment would tout it as an enhancement to their own election-night plans. In its

version of the traditional "story of the story" – headlined "The Courant Prepares for

Operation Election" – the *Hartford Courant* described the efforts that had been underway

for weeks to collect "statistics of past elections and other background data."[123] In

describing how the paper would handle all the returns pouring in from across the state

and process them quickly, the story gave a nod to help from a machine "obtained" from

IBM: "large mechanical-brains which by the push of a button can give an up-to-date

mathematical picture of all election returns in the state in about two minutes."[124] The

precise type of equipment was not specified in the story. A photo – appearing above the

caption "MECHANCIAL BRAINS help, too" – shows a woman tending to a device that

appears to be an IBM accounting machine of the type produced in the late 1940s as an

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[122] John Charles Daly, letter to John Madigan, Station WMTW, Poland Springs, Maine, Sept. 20, 1956, Box 11, Folder 2, John Charles Daly Papers, WHS. The recipient of the letter, John T. Madigan, who was working in 1956 at a television station in New England, had been ABC's television news director in 1952.

[123] "The Courant Prepares for Operation Election," *Hartford Courant*, Nov. 2, 1952, Sunday magazine, 3.

[124] Ibid.

improvement to earlier models. [125] Such electric machines processed data on punched

cards based on instructions wired into a control panel, and they could produce printed

summary reports. The accounting machine was not a computer, but it was worth touting

nonetheless as the latest addition to the newspaper's election-night number-crunching

arsenal.

While the *Courant* itself would not be broadcasting on election night, it could

expect that its ability to call the fate of Connecticut's electoral votes quickly would be

reported by the Associated Press – a dispatch which, in turn, might be reported to

national radio and television audiences and attributed to the newspaper. That, in fact,

turned out to be the case, as the paper presciently predicted that the use of voting

machines throughout Connecticut would likely enable the state to be the first with

complete returns. "Because of that," the *Courant*'s story reported, "the eyes of political

leaders and political experts all over the country will be focused here as they look for

trends."[126] There would be the chance for prestige in being on top of those trends – at

least in the eyes of the *Courant* – and the IBM equipment could help, both in speeding

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[125] A story that ran after the election referred to the "special IBM tabulator" used by "The Courant's team of election experts." "The Dispatch That Heralded Ike's Landslide," *Hartford Courant*, Nov. 9, 1952, 18. The photograph that accompanied the pre-election story resembled one of a sequence of IBM accounting machines of the models 402, 403, or 419. When combined with several other pieces of equipment, such accounting machines served as one component of the Card-Programmed Electronic Calculator. Sources for photographs and descriptions of IBM equipment of that era include: Frank da Cruz, "Columbia University Computing History: A Chronology of Computing at Columbia University," Columbia University, http://www.columbia.edu/acis/history/; IBM Archives, online at http://www-03.ibm.com/ibm/history/index.html; and Bashe et al., *IBM's Early Computers.*

[126] "The Courant Prepares for Operation Election," *Hartford Courant*, Nov. 2, 1952, Sunday magazine, 3.

the tabulation of returns and in the message it conveyed about the newspaper's cleverness in using special technology to get the job done.[127]

The *New York World Telegram and Sun* did even more to call attention to its planned election-night use of "super-speed IBM electronic calculators and accounting machines."[128] At first, IBM was absent from the newspaper's promotion of its plans to collaborate with the ABC station, when readers were told on Oct. 22 that "Newspaper and TV will link their great crafts in the city room of the World-Telegram and Sun on election night."[129] WJZ-TV, it was promised, would bring "its TV audience directly to the W-T&S city desk, the heart of a newspaper's world."[130] But nine days later, on Oct. 31, a story about the election-night plans featured a breathless account of the IBM role, including photos, under the headline, "Lightning-Fast IBM Devices to Help Speed W-T&S Televised Vote Count."[131] IBM was providing a "battery of IBM equipment of the latest design," all of which would be operated by "trained personnel" from IBM.[132] There would be a card-punch machine for entering data, an accounting machine that could spit out tables at the rate of 150 lines per minute, and an electronic calculator that was said to be capable of performing 6,000 calculations per minute. Reports "whipped out" by these

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[127] The *Courant* would boast about this after the election in a story about its conclusion, less than an hour after the polls closed, that Eisenhower had taken Connecticut: "The Dispatch That Heralded Ike's Landslide," *Hartford Courant*, Nov. 9, 1952, 18.

[128] "Lightning-Fast IBM Devices to Help Speed W-T&S Televised Vote Count," *New York World-Telegram and Sun*, Oct. 31, 1952, 25.

[129] William Michelfelder, "W-T&S and Video to Team in All-Night Election Coverage," *New York World-Telegram and Sun*, Oct. 22, 1952, 27.

[130] Ibid.

[131] "Lightning-Fast IBM Devices to Help Speed W-T&S Televised Vote Count," *New York World-Telegram and Sun*, Oct. 31, 1952, 25.

[132] Ibid.

wondrous devices would be handed off for analysis to the newspaper's "trained political observers and reporters," focusing on the tri-state area, presumably New York, New Jersey, and Connecticut.[133] The IBM equipment would also help provide comparisons of the night's returns to the 1948 vote. Newsroom activity in the "election drama" was to be shared twice each hour with viewers watching the ABC television network.[134]

One of the photos, of a young woman tending to IBM equipment and smiling brightly at the camera, has the look of the kind of image that might have been provided by the company. But in other ways large and small, IBM missed opportunities for advance publicity. One example was a *Los Angeles Times* account of television broadcasting that would be available to local election-night audiences. Writing of coverage originating out of the NBC's new West Coast studios in Burbank, the *Times* wrote that "Lockheed's giant electronic computing machines will be used for lightning-fast calculations," but with no mention of machines' maker, IBM.[135] And on the same day that the *New York World-Telegram and Sun* gave IBM a plug for its upcoming role in the city room, a separate column by television writer Harriet Van Horne mentioned the Monrobot and UNIVAC but made no mention of the IBM equipment to be used at ABC, reporting instead on that network's dismissal of its competitors' plans for such electronic devices.[136]

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[133] Ibid.

[134] Ibid.

[135] Walter Ames, "Networks, Local Stations to Use All Facilities Covering Presidential Election Tonight," The Los Angeles Times, Nov. 4, 1952, 20.

[136] Harriet Van Horne, "Ballot Brains Train on Election Picture," *New York World-Telegram and Sun*, Oct. 31, 1952, 25.

Mixed Response: The Case of Bill Henry

While the NBC public-relations apparatus was positioning the Monrobot in

exclusively laudatory tones, more revealing of a mixed reception among working

journalists was a column that ran on election day in the *Los Angeles Times*.[137] The writer

was the 1952 version of a multimedia reporter – one who would, in fact, also be

anchoring the NBC television broadcast on election night. The author, Bill Henry, had

been a *Los Angeles Times* fixture for 40 years by that point – as a reporter, editor, foreign

correspondent, and, since 1939, daily columnist.[138] He found time to work in other media

along the way. For 29 of those years he had been a radio reporter and commentator.

When the political conventions rolled around in the summer of 1952, with the two major

parties both gathering in Chicago, NBC chose Henry to play a pivotal role, including

anchoring its television coverage.[139] He was comfortable broadcasting live. He had an

easy manner and quick wit that won him fans, no matter the medium. And on election

night, he would be at Rockefeller Center in New York anchoring the NBC television

broadcast. So in his election-day column, he could reveal what he knew of NBC's plans

for the Monrobot. He referred to both the Monrobot and UNIVAC by a host of colorful

monikers. "Computer" was not one of them. His more irreverent references – including

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[137] Bill Henry, "By The Way With Bill Henry," *Los Angeles Times*, Nov. 4, 1952, Part II, 1.

[138] Bill Henry's background in this chapter comes from the following: Val Adams, "How Much Commentary is Necessary? Bill Henry and Walter Cronkite Offer Two Points of View," *New York Times*, July 20, 1952, X9; Bill Henry, "By The Way With Bill Henry," *Los Angeles Times*, Nov. 4, 1952, A1; "The Man Who Doesn't Take Sides," *Time*, Dec. 25, 1964; "Henry for Hedda," *Time*, Aug. 18, 1941; "One Big Stage," *Time*, July 21, 1952; Frank, *Out of Thin Air*, 58-59.

[139] Henry was to be such a critical part of the coverage for NBC and Philco that when they announced their plans more than six months earlier, he was the only reporter named in the 13-paragraph story in the *New York Times*; "N.B.C. Set to Cover '52 Political Drive," *New York Times*, Jan. 1, 1952, 30. Some details about Henry's choice and role as anchor are provided by Frank, *Out of Thin Air*, 68-69.

"fearsome contraptions" and, for the Monrobot, "mechanical monster" – suggest he had not completely signed on to NBC's vision for the Monrobot. Well, he had not signed on to glorify the Monrobot. But judging from his column, he understood perfectly well that grinding through a mass of numbers was not the Monrobot's only value to the network on election night.

After telling his readers he was hopeful that the election would terminate "the disgraceful mudslinging that has characterized this campaign," Henry turned his attention to the business of reporting returns on television – that is, to the story of the story. He set up his column as a contrast of old and new. Those who had "lived long enough to be able to remember the preradio days when you eagerly awaited the shouts of the newsboys to buy an extra or waited for the wailing sound of The Times' siren to cryptically tell you of the final outcome you'll appreciate this TV election service all the more." [140] Radio here was also cast as harking back to a simpler time, when results could be read over the air, while television brought its purveyors a new set of challenges. Election-night reporting called for innovations. And the most "startling" of these, wrote Henry, "will be the official debut of the mechanical brain."[141] In the keep of "some sort of human genius," the networks' "fearsome contraptions" were to figure results and spot trends faster than a human could.[142]

Henry played off the image of the machine against NBC's venerated political commentator, H.V. Kaltenborn, and left no doubt that the notorious election-night gaffs of 1948 were still a fresh memory, not only at the network but among readers.   And if

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[140] Bill Henry, "By The Way With Bill Henry," *Los Angeles Times*, Nov. 4, 1952, Part II, 1.

[141] Ibid.

[142] Ibid.

the machine had been anthropomorphized to be regarded as a "mechanical brain," the

comparison was also useful, in Henry's telling, by turning it around: The machine was

"to take the place of the human calculator, like H.V. Kaltenborn for instance, who gazed

fixedly at figures, charts and maps and kept right on insisting up to the last minute in

1948 that Harry Truman had been beaten and Tom Dewey had been elected." Henry went

on to remind readers that "no less a personage" than Truman later mimicked Kaltenborn

over the episode – adding to Kaltenborn's celebrity.[143] So now, said Henry, the "great

minds of the television business" had come up with the plan to use the mechanical brain –

"to do what Kaltenborn did, only it is supposed to guess right where Kaltenborn guessed

wrong. And who knows?" Henry went on with the comparison, saying that while the

NBC machine is named Monrobot, "the NBC boys think their machine should really be

christened Nrobnetlak (Kaltenborn spelled backward) in honor of the dean of radio

analysts."[144] Henry described the Monrobot methodology by giving an example of

"Zilch County, California." Returns from election night in 1952 and the data for the same

county from 1948 would be fed into the machine. Then "the bright little collection of

tubes and wires will whirr for a while and then come up with a prediction…"[145] But, said

Henry, "the darn thing doesn't 'think' – as some people choose to believe – it merely

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[143] At the dinner of presidential electors in January 1949, Truman's mimicking of Kaltenborn's tenacity in holding to a Dewey victory prediction on election night was deemed a highlight of the event; Robert G. Dixon, Jr., "Electoral College Procedure," *The Western Political Quarterly* 3, no. 2 (June 1950): 220. Kaltenborn also mentioned it in his autobiography, *Fifty Fabulous Years,* 297.

[144] The parenthetical reference is Henry's.

[145] Ibid.

calculates."[146] After confessing that "most reporters can't add 2 and 2," he writes that the

Monrobot and UNIVAC should be an improvement.[147]

Henry concluded with another mixed message. He was interested, to be sure, but

ambiguously so: "Most of us who will be grappling with the election problem over at

NBC, with the assistance of Monrobot, are viewing the activities of the mechanical

monster with considerable interest."[148] Noting that Morgan Beatty – a correspondent

whose name would have been familiar to radio and television audiences – was to be

"nursemaid or interpreter" for the Monrobot, Henry wrote that most who know Beatty

"would bet on him against any calculating machine extant."[149] And as for Kaltenborn, if

the Monrobot were to come up "showing Maine going for the Democrats" – which

readers would have also recognized as an outlandish notion – "we all expect," Henry

wrote, "to see H.V. Kaltenborn go after it with a screw driver and a pair of pliers, or

maybe with a sledge hammer."[150]

Henry's contemplation of the entry of a computer into his world of journalism

seems to have left him bemused as much as anything else – not accepting of it, but not

absolutely dismissive, either. With humor as his approach, he had framed the computer

both as a potential aid – for those journalists with no affinity for mathematics – and as a

potential competitor. And it was clear that he would need to be convinced that a machine

could outperform a star reporter. While his column did not explicitly articulate just why

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[146] Ibid.

[147] Ibid.

[148] Ibid.

[149] Ibid.

[150] Ibid.

he was amused over the idea of a computer doing election-night work previously thought

to be the sole purview of humans, he implicitly raised and began to answer the question

of just what it was that human journalists were good for: providing assessment, meaning,

and context for whatever it was that the machine might put out. Henry's amusement

would be visible on election night – as would his return to this issue.

On the Television Beat: Reporters Respond

Bill Henry's portrayal of the computer in his *Los Angeles Times* column meshed

with what a number of print reporters and columnists who covered television wrote as

they surveyed what the networks would be offering on election night. Readers were told

to expect a contest – not just between the candidates or the networks or different types of

media, but between humans and their mechanical devices. And that meant addressing the

question of whether computers would be doing the work of journalists. Associated Press

writer Wayne Oliver began his story this way: "It will be men versus machines on radio

and television election night to see who can pick out trends and forecast the winners most

accurately on the basis of early returns." [151] He introduced the computers first –

UNIVAC and Monrobot – and then the "human contingent." Oliver explained the

methodology of the "electronic robot brains" – early returns on election night compared

to early returns from prior elections. And then this:

> The big calculating machines, however, cannot think but can do only
> what they are told to do. Their forecasts will be mathematically correct on
> the basis of the data they have been given and [the] way they've been

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[151] Wayne Oliver, Associated Press, "Robots on Video: Man vs. Machine On Election Night," *Washington Post*, Oct. 29, 1952, 35. The story apparently moved on the wire several days earlier; a version with no byline and an Oct. 25 dateline appeared as "Men, Machines Will Relay Ballot Tallies" in the *Los Angeles Times* on Oct. 26, 1952, E11.

instructed to use it. They can be way off base if late returns develop unforeseen trends.

So both CBS and NBC will have all the tried and proved methods in full operation, with Univac and Monrobot merely in the role of helpers."[152]

Larry Wolters, television critic for the *Chicago Daily Tribune*, closely echoed the same themes in his "Television News and Views" column, though with more dramatic embellishments. His Oct. 27 piece began this way:

It will be man vs monsters [electronic] on television and radio on election night. The TV networks apparently are convinced that robots can pick out trends and foresee the winners more accurately than ordinary mortals. At any rate, they are talking more about their fantastic machines and gimmicks than they are about such old reliables as H.V. Kaltenborn, Gabe Heatter, Fulton Lewis, and Lowell Thomas."[153]

In addition to telling his readers of the UNIVAC and Monrobot, Wolters wrote that there would be "something frankly called the Monster over at ABC," with no further clarification.[154] Like Oliver, Wolters noted that "these robots will not think for the reporters, or for you."[155] And while the devices "can make calculations and analyses in a few seconds that would take even the Quiz Kids hours to do," he wrote, "the forecasts will be mechanically correct based on the data they have been fed." [156] Whether Wolters had spotted the AP story or whether he and Oliver had access to the same news releases from the networks, he went beyond both with his own prediction that would not have

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[152] Oliver, "Robots on Video."

[153] Larry Wolters, "Television News and Views," *Chicago Daily Tribune*, Chicago, Ill., Oct. 27, 1952, E6. The parenthetical reference is Wolters's.

[154] Ibid.

[155] Ibid.

[156] Ibid.

been in the networks' preferred script. "Probably," he wrote of the computers, "they'll be just as fallible as the straw votes and polls of other years."[157]

A week later, on the day before the election, Wolters took one more run at the subject.[158] He suggested that network executives were promising something of a spectacle and "predicting that more people will stay up all night Tuesday night than on any night in American history."[159] And while as many as 50 million television viewers might have their eyes "glued on the one-eyed monster," he wrote in a reference to a nickname for the television screen, they could expect to see the "electronic monsters all tuned up to spew forth trends, foresee winners, and count votes faster and more accurately than ordinary mortals."[160] CBS, he wrote, would be "pulling the wraps off a computing machine called Univac," and "NBC-TV has a mechanical reporter called Monrobot warming up in the back room."[161] This time there were no fine distinctions about the machines not replacing humans, as Wolters had felt compelled to point out earlier. But that framework was not completely absent, as he reported this time that "the networks will have available not only machines, but men – more men than every before to report the election story."[162]

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[157] Ibid.

[158] Larry Wolters, "Television News and Views," *Chicago Daily Tribune*, Nov. 3, 1952, B12.

[159] Ibid.

[160] Ibid.

[161] Ibid.

[162] Ibid.

Not all who wrote about the upcoming employment of computers on election night felt compelled to work in any digs or humor in that man-vs.-machine vein.[163] Some whose stories included a straight account of planned election-night computer use appeared content to rely primarily or solely on press releases for that part of their reporting. One such story was an item of several hundred words that appeared in the Nov. 1 issue of the trade magazine *Editor & Publisher*. Taken verbatim from the CBS release issued on Oct. 14, the *E&P* item described the UNIVAC and its planned use in wondrous terms and included just one original element, the headline: "Electronic 'Brain' Will Turn Election Reporter."[164]

Behind the Scenes: UNIVAC and CBS

While CBS was publicizing its election-night plans in wondrous terms, the work behind the scenes at the Eckert-Mauchly plant in Philadelphia was becoming ever more intense and drawing in more and more people to make sure that the UNIVAC would have a workable methodology to employ on election night.[165] Several reports, speeches,

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[163] See, for example: Walter Ames, "Networks, Local Stations to Use All Facilities Covering Presidential Election Tonight," *Los Angeles Times*, Nov. 4, 1952, 20; Jack Fitzgerald, "All Night Election Returns Week's Big TV Attraction," *Hartford Courant*, Nov. 2, 1952, Sunday magazine, 15.

[164] "Electronic 'Brain' Will Turn Election Reporter," *Editor & Publisher*, Nov. 1, 1952, 46. The comparison here was made with the previously discussed Oct. 14 CBS release, "CBS-TV to Use Giant Electronic 'Brain' Election Night."

[165] Sources for this account of the methodology employed in generating predictions with a UNIVAC on election night include: Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," HML (with copies also archived elsewhere, as noted in Chapter 1; these give the same account of the methodology used); Draper, "UNIVAC on Election Night," *Electrical Engineering*. Sources also include the following from Box 3:C:8, Folders 190-191, John W. Mauchly Papers, UP-RBML: Draper, "UNIVAC on Election Night," paper for AIEE Meeting, Jan. 22, 1953; P.S. Vincent, "UNIVAC and Election Predictions," speech made to Stamford Engineering Society, Norwalk, Conn., Oct. 18, 1956; "Methods Report: The Use of Computers and Data Processing Equipment in the 1956 Election," by the staff of John Diebold & Associates, Inc., Automatic Data Processing Methods Service (Chicago: Cudahy Publishing Company, Nov. 2, 1956); "UNIVAC and the 1956 Election," source identified as "Information prepared

articles, and memoirs produced later by the participants paint a picture of a collective, pioneering attempt under deadline pressures to bring quantitative precision to an old election-night habit of reading meaning into early returns.

What was not envisioned at first was just how challenging that would be. There would need to be a theory – with mathematical, political, geographical, and historical aspects – for extrapolating from early returns in one part of a state that might not be representative of the state as a whole, and for extrapolating from some parts of the country when others had not yet begun to count votes. This theory would need to be expressed as a mathematical model. The model would need to be translated into a computer program. The program would need to make use of a variety of data gathered in advance about voting history if there were to be comparisons made to the past. There would need to be a means for gathering data in real time on election night, transmitting it to Philadelphia, coding it into machine-readable form, loading it onto reels of magnetic tape, and feeding that data into the computer – paying attention, all the while, to possibilities for errors. There would need to be a backup plan in case of a breakdown by the particular UNIVAC designated for the analysis, one of several then in various stages of completion and operation at the Philadelphia factory. And there would need to be a means of producing comprehensible output and transmitting it to CBS in New York for reports to the viewing audience.

by – Dr. Max Woodbury," date stamped July 20, 1956; "Management Controller #831, Application of the UNIVAC Fac-tronic System to Election Prediction" [the author and date not given; much in this report is identical to "How UNIVAC Predicted…"]. Other sources include interviews -- Max A. Woodbury, interview by the author, Birmingham, Ala., Sept. 30, 2004; and Stephen E. Wright, interview by the author, Doylestown, Pa., April 10, 2006 – as well as previously cited memoirs, including Lukoff, *From Dits to Bits,* and Mickelson, *From Whistle Stop to Sound Bite*. Not all sources are consistent – especially in terms of how the chronology and results of election night itself – but the account here captures the common and generally consistent elements from these sources.

Remington Rand's Arthur Draper, in a post-mortem presentation prepared for an

engineering association meeting in January 1953, wrote that the work had begun with

confidence about being able to solve the problem of election prediction. "We very

blithely assumed," he wrote, "that such a calculation was possible and we were sure that

UNIVAC would be able to handle anything that we could dream up."[166] But that

confidence within the UNIVAC camp would be tested:

> As time began to run out, we realized that the problem was getting bigger
> and bigger, and we called in a Dr. Woodbury, who is Associate Professor
> of Statistics at the University of Pennsylvania, to work with Dr. Mitchell,
> who is the head of our UNIVAC Applications Department. We began to
> realize at this time that there was not even a vague formula for prediction
> that could be applied, and our mathematical group with Dr. Woodbury set
> out to develop a theory and put this into practical mathematics. This was
> an exceedingly complicated job in almost a brand new field.[167]

Even as Woodbury came aboard, there was not yet a full appreciation of the work that lay

ahead. In a report that Woodbury and Mitchell coauthored just after the election, they

wrote: "Our first and most serious mistake was to underestimate the magnitude of the

job."[168] Woodbury, they wrote, was "engaged on Oct. 7 'for a few days' " to work out the

statistics to be used. [169] But the work would mushroom – including work using old-

fashioned, hand-operated machines for calculations – beyond anyone's expectations:

> [Woodbury] asked for a small amount of manual investigation of our data
> and went to work. By October 28, he was using a corps of 8 comptometer
> operators on a 60-hour week. He investigated and was forced to discard
> for lack of sufficient data several promising approaches, and finally, eight
> days before election, completed his set of formulae. Meanwhile, the
> programming group had been busy. From a part-time assignment of two

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[166] Draper, "UNIVAC on Election Night."

[167] Ibid.

[168] Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," HML.

[169] Ibid.

programmers, the group grew to over 6, each putting in from 90 to 120 hours during that final hectic week. [170]

Two of the programmers singled out for special credit in the report – Margery K. League and Hildegard Nidecker – were themselves pioneers in that field whose work with Eckert and Mauchly on the UNIVAC predated the Remington Rand acquisition. So, too, had the programmer in charge of the work, Stephen E. Wright, another World War II veteran who had studied with Howard Aiken at the Harvard Computation Laboratory. Wright recalls that he and others ended up essentially moving into the factory at the end, sleeping on cots so that they could be available in early morning hours to test out one program after another had finished running.[171]

The formulas that were finally devised for election night are explained in several post-election documents.[172] The most detailed of these is Woodbury and Mitchell's post-election report, which also appears to have been a source for other accounts. It contains a list of more than three dozen equations, explanations of the variables used, and the rationale for their approach. Data was gathered in advance for comparative purposes, including what was described as "detailed state data for 1944 and 1948, showing at hourly intervals the reported returns for each candidate and the percent of precincts reported."[173] This was provided by CBS, which also provided "the number of precincts in each state and metropolitan county."[174] The UNIVAC team also had a copy of a political

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[170] Ibid.

[171] Stephen E. Wright, interview by the author, Doylestown, Pa., April 10, 2006.

[172] These are detailed in the first footnote for this section on behind-the-scenes activity at CBS and UNIVAC.

[173] Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," HML.

[174] Ibid.

almanac put out by Gallup, which contained historical election data – presumably the source of state level data for presidential elections back to 1928 that was also used in the calculations. The goal was both to produce state-level predictions and to use these in generating an aggregate national prediction of likely electoral vote, popular vote, and total vote. Predictions would include specific numbers, but these would be associated with estimates of their probabilities of being correct. For eight states deemed "non-homogenous" – based on the "known fact that metropolitan districts are often politically divergent from the more rural portions of a State" – separate calculations were made for key metropolitan counties or cities and for the balance of the state.[175]

There were two basic approaches to generating predictions. One involved combining the expected vote from past elections with the vote coming in on Nov. 4, and giving greater weight to the current vote as the night went on. The other was an answer to a particular election-night problem – and one that would in later years spark controversy – which was how to generate national predictions at a point in the evening when many states had not begun counting votes, or even finished voting. A member of the CBS camp – Sidney Alexander, who had recently been appointed by CBS as an economic advisor – was credited with devising a solution. Incoming data on election night from available states would be used to calculate any swing away from the expected vote based extrapolating from the trend in past elections. This would provide a factor that could be applied to states which had not yet voted to estimate their potential swing away from previous trends.

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[175] Ibid. These key metropolitan areas were listed as: San Francisco County, California; Cook County, Illinois; Boston, Massachusetts; Hennepin, Ramsey, and St. Louis counties in Minnesota; St. Louis, Missouri; Bronx, Kings, New York, Queens, and Richmond Counties in New York; Cuyahoga County. Ohio; and Allegheny and Philadelphia Counties, Pennsylvania.

As good as the formulas might be and as clever as the programs using them might be, there was also awareness that the simplest data entry errors could compromise the entire methodology. In fact, wrote Mitchell and Woodbury, with many people involved in the data transfer process, "it was a foregone conclusion that erroneous data would appear in our input."[176] A system was put in place so that vote counts coming in by teletype from CBS on election night to Philadelphia would be inspected and then entered in triplicate from keyboard operators onto magnetic tape. The three sets of returns were then compared to make sure they agreed. In addition, even where the three sets might agree, the data were screened for "reasonableness."[177] These checks were meant to make sure that the total number of precincts with reported votes on election night did not exceed the actual number of precincts in an area, and that the total number of votes per precinct was not outside upper or lower limits expected based on past elections. In addition, there were checks made to ensure that the vote coming in for a particular area was not less than the vote for the same area reported earlier in the night.

While the UNIVAC team in Philadelphia had been concentrating on what the UNIVAC would do, those organizing the CBS election-night broadcast in New York were focusing on how the UNIVAC would look. On Oct. 28, CBS issued a release that included a feature on the network's election-night set which had not been mentioned when the UNIVAC plan was announced two weeks earlier:

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[176] Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," HML.

[177] Ibid.

> In one corner of the studio will be the New York unit of UNIVAC, the giant automatic computer that will make running analyses and trend predictions at instantaneous speeds periodically during the night. [178]

Left out of this release was the fact that the UNIVAC doing all this work would be in Philadelphia and would be seen on election night periodically from there. What viewers would end up seeing in the New York studio would turn out to be an operator's console – the part of the computer known as a "supervisory control panel" that had been described in news stories as "somewhat like the console for a pipe organ." [179] It was not hooked up to a computer. But on election night, the audience would see its banks of lights blinking on and off as if it were running a program, with newsman Charles Collingwood stationed in front of it. In an account written years later, Herman Lukoff, who had responsibility for the computer's physical functioning in Philadelphia on election night, gave this explanation of how that so-called "New York unit" came to be as plans for the broadcast developed:

> CBS … wanted to have a dummy supervisory control panel located at its New York headquarters for use as a backdrop while reporting between the hourly Philadelphia TV pickups. A supervisory control panel for one of the next systems was commandeered for the cause. However, someone thought it would look better of the lights flashed on the panel rather than just having it sit there looking stupid. The technicians quickly wired up a group of incandescent bulbs to Christmas tree light flashers, then off to CBS headquarters in New York went the supervisory control panel. [180]

Though not explicitly stated as a goal in this account – which, like other accounts from the UNIVAC and CBS camps, includes no mention of NBC and the Monrobot – the net

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[178] "Specially Designed and Constructed Visual Aids Will Make It Easier for CBS-TV Audiences to Follow Election Night Returns," press release, CBS, Oct. 28, 1952, CBS-AS.

[179] Associated Press, "UniVac, Electronic Robot, Fattened for Election Duty," *Hartford Courant*, Oct. 15, 1952, 21B; and "CBS to Use Electronic Robot to Forecast Election Results," *Philadelphia Evening Bulletin*, Oct. 15, 1952, 9.

[180] Lukoff, *From Dits to Bits,* 128.

effect was that now there would be not only analytical but visual competition between the two computer-reporting efforts.

Behind the Scenes: Monrobot and NBC

In a head-to-head matchup, the UNIVAC would be expected come out ahead of the Monrobot in almost every way. But there was one eminently visible exception: the Monrobot, at a fraction of the weight of the UNIVAC, and about the dimensions of an office desk, could be moved. It was one of the features of the Monrobot that NBC highlighted in its advance publicity: the Monrobot would be installed right on the NBC election-night set in Studio 8-H. But Richard LaManna recalls that this plan turned out to be fraught with difficulties before election day ever arrived.[181]

The Monrobot was designed in such a way that its computation elements – tubes, circuits, magnetic drum memory, and other parts – fit inside a metal unit the shape of a desk. Many tubes and circuits were mounted on a surface that flipped up like a lid to expose other components beneath. The Monrobot was still under development, said LaManna, so work on it had been done with the machine open. In order to truck it from New Jersey to Manhattan, the Monrobot did not need to be disassembled, but it did need to be closed – the surface with the tubes had to be flipped down into a horizontal position, on top of which, said LaManna, the design included a desktop made of glass so that it would be possible to view the tubes through it. On top of the glass it was also possible to put in place a real desk top, completing the office-furniture look that the Monrobot was intended to have.

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[181] Richard LaManna, telephone interview by the author, Dec. 14-15, 2004; this interview is the source of the account that follows.

When the Monrobot arrived at Rockefeller Center and was moved up to the studio and powered up, the team from Monroe discovered, the hard way, that there was a serious problem. When the Monrobot had been closed up, small bits of solder fell into the interior of the computer and ended up doing damage to the computer's magnetic drum. LaManna recalls spending hours bent over the Monrobot's frame, working with a tool like a dentist's pick to remove small bits of debris from the drum. The Monrobot's keepers were able to get it running, but without all the functionality that was intended.

For the election-night broadcast, there would not be a need to close up the computer again. A design that was intended to make the Monrobot fit seamlessly into a business office was not its strong suit when it came to election-night showmanship. The computer would run with the lid open, intentionally, and with its electronic components exposed and visible. "That's what they wanted," said LaManna. "They wanted the jazz. They didn't want it to look like a desk."[182]

The Monrobot's pre-election difficulties notwithstanding, LaManna said that the computer became a curiosity at Studio 8-H in the few days it was there up to Nov. 4. Celebrities would come by to have a look. "It was a curiosity," he said, "like … a freak in a sideshow."[183] And NBC broadcast engineers who had some knowledge of electronics would come by, too, peppering him and his colleagues with questions.

LaManna's own role was to look after the physical operation of the Monrobot, and he was not involved in developing the methodology to be used in analyzing the returns. Just what that was is not clear from records or the recollections of others. This

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[182] Ibid.

[183] Ibid.

methodology may have been intended to make comparisons of partial vote counts to results from the past. There are references in NBC's Oct. 16 and Oct. 30 press releases to data from 1948 having been stored in the computer's memory. The approach may have also been less ambitious, designed to work more from the incoming vote and to make sure that in states with urban and outlying areas of different political complexions, both were taken into account.[184] But, said LaManna, with the computer operating in a somewhat diminished capacity, the backup plan included calculations that might be done by hand. And the ace in the hole would be the political expertise of Morgan Beatty, the NBC newsman who was assigned to aid in planning the election-night analysis and then to report on and provide context for the Monrobot's output on Nov. 4.

Such expertise, however, was in itself no guarantee of success for assessing in real time the incoming vote in an election with its own unique set of circumstances. As had been the case for decades, election night was a chance for journalists to shine, but it also carried risks. And journalists were not the only ones at risk of having reputations sullied by problematic prognostication. Pollsters had not only their reputations but their livelihoods at stake on election night, and their awareness of that – and the way that awareness colored the presentation of their final polls – would, in turn, have the capacity

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[184] Burkhart mentioned this when he was quoted in a post-election *Newsweek* article about computer use on election night ("The Machine Vote," *Newsweek*, Nov. 17, 1952, 63-64). The account does not reveal much about just what else the Monrobot did, but it does include this line: "Instead of basing its calculations on breakdowns of previous elections, Monrobot was told by its manager William Burkhart to assume that 'the most you can san say about the past is it's crazy.'" No documents have turned up to date that detail the methodology used. LaManna (telephone interview by the author, Dec. 14-15, 2004) said that Irving Gardoff, a mathematician and programmer who worked on the program, could have played a role in developing the election-night algorithms. But Gardoff, who was interviewed by the author by telephone on Jan. 4, 2005, not long before he passed away, indicated that he not have a detailed recollection of the method used.

to color election-night assessments by various players of the meaning of the vote as it came in.

The Final Polls and the Memories of 1948: Prognostication and Risk

By 1952 there was already a well-established history of pre-election polls both coloring election-night assessment of the returns and coming back to haunt not only the reporters but the poll-takers. Some of these events are legendary in journalism history. These include the *Literary Digest* debacle of 1936, with its large but unscientific straw poll, and the embarrassment faced in 1948 by both the new breed of scientific pollsters and the journalists whose reading of the returns had been colored by their poll-influenced expectations.[185] As pollsters and social scientists labored to understand what went wrong in 1948 and restore a measure of credibility and public confidence in the survey process, collaborative studies were undertaken, books were written, and individual analysts took a close look at their methods and assumptions. But even with all of that attention, one wildcard in the fall of 1952 was the number of survey respondents who were not yet ready to indicate a preference. This prompted an open question about how pollsters should apportion that slice of the electorate. There were differences, too, in explaining what appeared to be a shift in voter sentiment for the presidency away from the party of Harry Truman and toward Eisenhower. Pollsters tried to understand whether there was a core of independent voters who might go one way or the other from election to election, or if something else was at work. One of these was Samuel Lubell, a public opinion analyst who specialized in the intensive study of detailed voting data combined with

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[185] This is discussed in Chapters 1 and 4.

extensive door-to-door interviewing in key precincts across the United States. After four

months of a "grass roots" tour, Lubell reported that he saw something more than just

independent voters at work in the political landscape's critical middle ground: "sizable

defections" of Democrats who had previously voted for Truman and Roosevelt.[186] In his

column for the Scripps-Howard newspapers eight days before the election, Lubell

concluded that there were enough of these defections to swing the contest to Eisenhower.

But his report was not completely confident. On the one hand, a "possible freak of the

Electoral College" could give Stevenson more electoral votes even if Eisenhower took a

majority of the popular vote.[187] On the other hand, there was a plausible scenario by

which Eisenhower could win in a landslide and yield up "an electoral alignment unlike

any in modern times."[188]

The final polls that turned up in newspapers on Nov. 4 were Gallup's, made

available to nonsubscribers for publication that day. The poll was so non-committal that

an Associated Press story about it appeared on front pages of newspapers around the

country with completely divergent headlines. In Bismarck, North Dakota: "Gallup Says

Ike Has Edge."[189] In Brainerd, Minnesota: "Stevenson May Hold Lead—Gallup."[190] And

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[186] Samuel Lubell, "The Voters Speak: Grass roots Poll Favors Ike; Switch from 1948 Found By Analyst," *New York World-Telegram and Sun*, Oct. 27, 1952, 1-2.

[187] Ibid.

[188] Ibid.

[189] Associated Press, "Gallup Says Ike Has Edge," *Bismarck (N.D.) Tribune*, Nov. 4, 1952, 1.

[190] Associated Press, "Stevenson May Hold Lead—Gallup," *Brainerd (Minn.) Daily Dispatch*, Nov. 4, 1952, 1.

in Fayetteville, Arkansas: "Gallup Poll Notes Possibility of 50-50 Popular Vote."[191]

The story said this:

> The Gallup Poll, last of the nation's major political pulse-takers to make known its final 1952 presidential election forecast, gives Gen. Dwight D. Eisenhower a slight lead, but says Gov. Adlai E. Stevenson was gaining so steadily he might be ahead by today.
> The Gallup Poll, which was made available for use by non-subscribers today, even saw the possibility of a 50-50 split of the popular vote.[192]

Gallup went on to say: "The electoral vote, which will decide the winner, depends upon four key states: New York, Illinois, Ohio and California – where latest figures show the candidates running virtually even."[193] While Gallup gave 47 percent of likely voters to Eisenhower and 40 percent to Stevenson, a whopping 13 percent were identified in the poll as undecided. The Associated Press went on to note that three other polls released the day before the election – the Crossley Poll, the Elmo Roper Poll and Samuel Lubell's analysis for the Scripps-Howard newspaper chain – gave Eisenhower the advantage, but not enough of one to prompt a prediction of an Eisenhower victory. A United Press story said pollsters were calling for a "photo-finish."[194]

The Princeton Research Service reported on election day that its final poll, completed the Sunday before the election, gave Eisenhower 50.8 percent of the popular vote and Stevenson 48.8. The polling operation had detected a late swing toward Eisenhower. But even here, a lack of certainty reigned. In a paragraph noting that

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[191] Associated Press, "Gallup Poll Notes Possibility of 50-50 Popular Vote," *Northwest Arkansas Times*, Fayetteville, Nov. 4, 1952, 1.

[192] Ibid.

[193] Ibid.

[194] See, for example, United Press, "Samplers of Public Opinion See Photo-Finish for U.S. White House," *Panama City (Fla.) News*, Nov. 4, 1952, 2.

margins of error had "averaged slightly less than three percentage points since our operations began in 1947" – which would seem to point, in this case, to a statistical dead heat between the two major party candidates – the article concluded, ambiguously: "We never have failed to indicate a winner, and never have been wrong."[195]

Unscientific straw polls of all sorts abounded, too. They were treated as curiosities, to be sure, but they were also testimony, if nothing else, to an intense and longstanding interest in reading the signs before an election, just as had been done with the counting of toasts to the presidential candidates back in 1824.[196] In 1952 there was a "cigarette poll." The Louisville Tobacco Blending Corp. marketed cigarettes with competing presidential labels, one that said "I Like Ike" – precisely 26,731,740 were reported sold – and the other that said "Stevenson for President," coming in second at 23,531,600.[197] There was a nationwide barbershop poll – it favored Stevenson by a few points – and a feed-sack poll among patrons of farm supply stores in the Midwest, favoring Eisenhower by a few points.[198] There were two surveys of more than 2,000 newspaper editors and political correspondents, carried out and reported by the Associated Press, about voter sentiment in their areas.[199] *Editor & Publisher* magazine surveyed newspapers about their own editorial positions. Two-thirds favored Eisenhower,

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[195] Princeton Research Service, "The U.S. Poll – Ike Holds Lead in Popular Vote," *The Post-Standard*, Syracuse, N.Y., Nov. 4, 1952, 1.

[196] Discussed in Chapter 2.

[197] Associated Press, "Smokers' Poll Gives Ike 3,000,000 Pack Edge," *Brainerd (Minn.) Daily Dispatch*, Nov. 4, 1952, 1.

[198] *U.S. News and World Report*, Oct. 31, 1952, 14; cited by Lower, "Use of Computers …" p. 21.

[199] Associated Press, "October Survey Showed Eisenhower as Victor," *Philadelphia Inquirer*, Oct. 26, 1952, 10.

and of the rest, more had made no endorsements than had backed Stevenson.[200] And not

to be left out, bookies in Nevada found that their own predictions – in the form of betting

odds – were reported as a news item by the Associated Press on election day. The odds

favored Eisenhower, but Stevenson bets were said to be were "pouring in."[201]

Ahead of the election, pollsters came in for a ribbing for what some newspaper

editors and reporters took to be timidity linked to the missteps of 1948. "Straws in the

Wind Hit Dead Center," was the headline in an editorial in the *Press-Telegram* of Long

Beach, California. It said:

> If the actual returns amount to an eyelash decision, our Mr.
> Roper, Dr. Gallup and Mr. Field of the California Poll can settle
> back and take a bow.
> But if the majority turns out to be fairly substantial either
> way, we would hate to have to answer the mail of any of these
> gentlemen or most of their rivals.[202]

The *Oneonta Star*, in Oneonta, N.Y., put this headline on a front-page brief about the

cautious pre-election polls – "U.S. Pollsters Remember 1948" – even though 1948 was

neither mentioned nor alluded to in the article's three paragraphs.[203] A story by

Associated Press reporter Arthur Edson was more direct:

> Usually at this late hour a favorite has been well established
> and the outcome confidently predicted.
> Not so this time. Possibly because most of the opinion
> samplers went wrong four years ago, and possibly because this is a
> hard-to-figure election, the best guess is now:

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[200] Robert U. Brown, "Ike Press Support 67%; Stevenson Backed by 14%; More Than 18% of Dailies Not Supporting Either," *Editor & Publisher*, Nov. 1, 1952, 9-10, 69-71.

[201] See "Odds Facts," *Florence (S.C.) Morning News*, Nov. 4, 1952, 3; and "Reno Bookie Quotes Ike 2-1 Choice," *Syracuse Post-Standard*, Nov. 4, 1952, 16..

[202] "Straws in the Wind Hit Dead Center," *Long Beach (Calif.) Press-Telegram*, Nov. 4, 1952, A8.

[203] Associated Press, "U.S. Pollsters Remember 1948," *Oneonta (N.Y.) Star*, Oneonta, NY, Nov. 4, 1952, 1.

It could go either way.[204]

The *Florence Morning News* in South Carolina poked some fun at the pollsters, too, but not before setting a serious tone for the day with an unusual and striking front page. Most of that page was left blank. Below the masthead, in the center of a sea of white, there was a single, 17-line item, one column in width, with a small headline that said, "BE SURE AND VOTE TODAY." [205] It began, "We have always reserved the front page of this paper for the most important news of the day, and there is no more importance to every citizen today than to go to the polls and cast his VOTE."[206] What would otherwise have been the front page ran on page three, with two prominent stories including accounts of the non-committal pre-election polls. But at the bottom of the page, in one more nod to the matter of polls and forecasts, was a photograph just as goofy as the front-page presentation was serious. The picture showed the newspaper's acting editor, Jack O'Dowd, wearing a turban, his hands around an ersatz crystal ball (apparently a goldfish bowl), and his face eerily lit from below. "TELL ME, SWAMI," began the caption that identified O'Dowd as "a man of little faith in polls and none at all in forecasts," trying to "learn in advance how today's presidential election will turn out."[207]

No less a journalistic figure than Arthur Krock, the legendary Washington bureau chief of the *New York Times*, weighed in with a column about pollsters on the eve of the

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[204] This story appeared in many papers. See, for example, Arthur Edson, "55 Million Voters Due To Cast Ballots Today; No Favorite Picked Between Adlai, Ike," *Florence (S.C.) Morning News*, Nov. 4, 1952, 3.

[205] "BE SURE AND VOTE TODAY," *Florence (S.C.) Morning News*, Nov. 4, 1952.

[206] Ibid.

[207] Ibid.

election. He took to task the "professional vote-statisticians, who fear they can never again sell their wares if they go wrong again, as in 1948."[208] They were "hiding behind bomb-shelters," Krock declared, and were "not taking even the smallest of chances this year."[209] And yet Krock was not going out on a limb, either. He did note that his colleague, David Lawrence, was "courageously" willing to make a prediction without reservation – for Eisenhower.[210] Meanwhile, the *Times*'s own ambitious efforts to report in detail about how the voting might go concluded on the day before the election with the last of seven surveys carried out by its correspondents nationwide. The *Times* deemed the presidential contest to close to call.[211]

The Culture of Demonstration and the Element of Risk

If some reporters and commentators at the networks were less than thrilled about the inherent risk in employing a machine that might outperform them when it came to election-night analysis, those organizing the broadcasts had gone out of their way to put human-computer interaction at center stage – as a performance of sorts. The arrangements between CBS and the Remington Rand team, for example, called for Collingwood to interview the UNIVAC – or at last to make a show of interviewing the UNIVAC by asking it questions directly.[212] While this would be an election-night

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[208] Arthur Krock, "In the Nation: If It Is as Close as 'They' Say," *New York Times*, Nov. 4, 1952, 28.

[209] Ibid.

[210] Ibid.

[211] James A. Hagerty, "Election Outcome Highly Uncertain, Survey Indicates," *New York Times*, Nov. 3, 1952, 1, 16-17.

[212] This is described in Chapter 7.

novelty, it was not an entirely new concept at the network. The year before, in December

1951, CBS newsman Edward R. Murrow had done a television news broadcast

showcasing the Whirlwind computer at the Massachusetts Institute of Technology.

During this era when television broadcasters where working to establish their medium as

a legitimate venue for news, Murrow's weekly *See It Now* program had debuted in the

fall of 1951 and was immediately hailed by *New York Times* critic Jack Gould as a

"striking and compelling demonstration of the power of television as a journalistic

tool."[213] Episodes included reviews of the news, the airing of documentary film, and live

conversations between Murrow in New York and reporters or interview subjects

elsewhere. In December 1951, less than a month after *See It Now* was launched, MIT's

Whirlwind generated headlines following an announcement that it had completed trial

tests and was capable of handling some 20,000 operations a second – a computer fast

enough, for the first time, to operate where "real time" data processing was necessary, as

in air traffic control.[214] A few days later, on the afternoon of Sunday, Dec. 16, the

Whirlwind debuted for a television audience on *See It Now*.[215] Murrow informed his

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[213] Jack Gould, "Edward R. Murrow's News Review, 'See It Now,' Demonstrates Journalistic Power of Video," *New York Times*, Nov. 19, 1951, 26. Gould lauded the show in similar fashion twice between then and the end of the year. *See It Now* also drew praise from others, including TV critic John Crosby, whose year-end review describe it as "conceivably the most literate and intelligent and moving news show ever to coma along on television"; John Crosby, "TV-Radio Review: All in All, Old 1951's Been Quite a Year," *Washington Post*, Dec. 31, 1951, B7.

[214] The announcement was made on Dec. 12, 1952, in Philadelphia at the joint meeting of the joint American Institute of Electrical Engineers and Institute of Radio Engineers Computer Conference; Associated Press, "Instantaneous Computing Machine 'Thinks' 20,000 Times in a Second," *New York Times*, Dec. 13, 1951, 53; Associated Press, "New Machine Revealed for Computing*," Indiana (Pa.) Evening Gazette*, Dec. 13, 1951, 2. The story also appeared in other media, including magazine; for example: "Whirlwind, Ultra-Fast 'Brain,' Now Operating," *Science News Letter* 60, no. 25 (Dec. 22, 1951), 387-388.

[215] "See It Now: Interview with the Whirlwind," television recording, CBS, Accession 102651641, Computer History Museum, Mountain View, Calif. (hereafter referred to as CHM). Other sources, give the date of this broadcast as Dec. 16, 1951, including an online catalog of *See It Now* episodes at The Paley Center for Media, http://www.paleycenter.org.

viewers that they were going to be taken to the MIT computer lab. He opened the

segment with a note of wonder: "These are the days," he said, "of mechanical and

electronic marvels."[216] But there was also a hint of ambivalence – expressed through

tongue-in-cheek humor – along with a degree of self-consciousness about human-

computer interaction: "With considerable trepidation," he continued, "we undertake to

interview this new machine."[217]

While effecting a tone of spontaneity, the show was clearly a well-scripted affair.

One of two small television monitors on the set brought the viewers to MIT, where the

message "HELLO MR. MURROW" flashed repeatedly in points of light, like a movie

theater marquis, on the video screen of an oscilloscope.[218] This, in fact, was one of the

innovative features of the Whirlwind – the capacity to display its output graphically as

text and images on a screen.[219] Jay Forrester, director of MIT's digital computer lab,

gave a tour and then asked Murrow, "Would you like to try to use the machine?"[220] Back

in New York, Murrow replied that he thought they should switch down to the Pentagon,

given the roll of the Office of Naval Research in the Whirlwind project. On a second

monitor appeared Admiral Calvin M. Bolster, the head of naval research. He offered up a

question for Whirlwind about the fuel consumption and speed of an 11,000-pound Viking

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[216] "See It Now: Interview with the Whirlwind," television recording, CBS, CHM.

[217] Ibid.

[218] Ibid.

[219] Though the Whirlwind showed its visual display prowess in the broadcast, the commentary did not call attention to this as an innovation; it would have had to be inferred by the viewer. Arthur L. Norberg provides a brief list of the innovative features of the Whirlwind in "The Shifting Interests of the US Government in the Development and Diffusion of Information Technology Since 1943," in *Information Technology Policy: An International History*, Richard Coopey, ed. (New York, Oxford University Press, 2004), 30. Histories of the Whirlwind include Kent C. Redmond and Thomas M. Smith, *Project Whirlwind: The History of a Pioneer Computer* (Bedford, Mass.: Digital Press, 1980).

[220] "See It Now: Interview with the Whirlwind," television recording, CBS, CHM.

rocket. The computer set to work. Its oscilloscope displayed a pair of bar graphs

representing changes in fuel use and speed while a sequence of dots on the screen traced

out a parabolic rocket trajectory. Forrester narrated and the admiral approved, but

Murrow played the Luddite: "I'm just a middle man here," he said with a chuckle. "I

didn't understand the question, and I don't understand the answer."[221] He posed a

problem "on a little more personal level." If he had been an Indian back in 1626 and had

gotten $24 for Manhattan, he asked, would that have been a good investment? Forrester

explained the process of getting the answer as viewers watched two members of the lab

staff demonstrate the routine of entering the data on a punched tape and loading it onto

the machine. The Whirlwind typed out the answer that, at six percent interest per year,

the investment would have generated a return of more than $4 billion. Murrow approved.

Setting up the Whirlwind's final trick, Forrester said there was "another kind of

mathematical problem that some of the boys have worked out in their spare time in a less

serious vein for a Sunday afternoon."[222] One of the most complicated pieces of

machinery of its day then belted out a flat-toned version of "Jingle Bells."

     Even then, in 1951, this mix of the technical and the frivolous, showmanship in

the midst of a serious endeavor, and human-computer interaction was already part of an

evolving culture of demonstration in the nascent computer world.[223]   An even earlier

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[221] Ibid.

[222] Ibid.

[223] One of the regular figures in this culture of demonstration in later years would be Apple cofounder Steve Jobs, the consummate modern-day incarnation of inventor showman. His 1984 unveiling of the Macintosh computer included an exchange in which the machine speaks, and, to the delight of the audience, refers to Jobs as a man who had been "like a father to me." "Steve Jobs Demos Apple Macintosh," video, TechCrunch, http://www.techcrunch.com/2009/01/24/video-steve-jobs-giving-his-first-big-demo/. A generation later, in 2007, with computing, entertainment, and communication becoming increasingly integrated, Jobs took the stage at the Macworld Conference and Expo – an annual event that had become a cultural institution -- to unveil the Apple iPhone. And he began with a reprise of past unveilings, starting

landmark event had taken place in 1946 for the public debut of the Electronic Numerical

Integrator and Computer – ENIAC, for short – which was conceived of during World

War II and built in secret for the military at the University of Pennsylvania. After the war

ended and the machine was operational, reporters were invited to watch the ENIAC in

action during a two-day series of dedication events. Lights that were part of the ENIAC's

regular operations were even enhanced for the affair. Because the ENIAC's work was

classified, including calculations for nuclear weapons development, special programs

were crafted for the demonstration to show the ENIAC running through its paces. The

New York Times hailed the ENIAC on the front page, and its blinking lights were featured

in a MovieTone newsreel. [224]

What the election-night computing plans in 1952 had in common with these

earlier events – these publicity-minded demonstrations of wondrous new computers –

was a consciousness among the devices' inventors, engineers, and marketers of the

advantages of enveloping their very serious endeavors in a bit of showmanship. But

there was a big difference this time. Unlike other sorts of demonstrations that could be

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with the Macintosh in 1984 -- the sight of which generated applause from the 2007 crowd. "Macworld 2007- Steve Jobs introduces iPhone - Part 1," YouTube, http://www.youtube.com/watch?v=PZoPdBh8KUs.

[224] Sources for this account include: T.R. Kennedy Jr., "Electronic Computer Flashes Answers, May Speed Engineering," *New York Times*, Feb. 15, 1946; Frank E. Carey, Associated Press, "Huge Calculator 1,000 Times More Rapid Than Others," *Syracuse Post-Standard*, Feb. 15, 1946, 15; "Science: ENIAC," *Time*, Feb. 25, 1946. The demonstration and its planning were described by one of the participants, Arthur Burks, in a 1974 speech: Arthur Burks, "Who Invented the General-Purpose Electronic Computer," speech, Box 42, Folder 1, Series 8, John Vincent Atanasoff Papers, University Archives, Special Collections Department, Iowa State University. Original documents, including press releases, information sheets, guest lists, speeches, and correspondence are in the folder "ENIAC (Electronic Numerical Integrator and Computer); Dedication Ceremony, 15 Feb. 46, Philadelphia," Entry 646A, Box A770, "R&D: Coordinating Research Council to Foreign Correspondence," Military Historical Files, Historical Branch, Executive Division, Series: Military Historical Files, 1917 – 1962, Record Group 156: Records of the Office of the Chief of Ordnance, 1797 – 1968, Post World War I Division, National Archives, College Park, Md. A portion of the MovieTone newsreel can be seen on YouTube at: http://www.youtube.com/watch?v=OSYpYFEwr4o&feature=related.

worked out in every detail ahead of time, there would be no way to do that on election

night. [225] The data would be live, and the computer would be processing it in real time.

The journalists and the technologists would be performing a high-wire act of sorts, and

there could be no canned set of results to serve as a net.

So the publicity that had been invited for the computers and their network

broadcasts could cut both ways. There was a prescient observation in a *Variety* review of

UNIVAC co-inventor John Mauchly's performance on *The Johns Hopkins Science*

Review program featuring his computer a few days before the election:

> ... as regards its use in deciphering voting trends on Election Night, the
> value of UNIVAC will depend on the interpretations the newsmen make
> on what factors UNIVAC is to measure. Unless the significant polling
> places are watched, one shrewd politico and a man with an abacus could
> scoop the electronic marvel."[226]

The UNIVAC camp had made efforts to hedge their bets. Though they could not

can the results, there were several UNIVAC computers in the Philadelphia factory in

various stages of preparation for their eventual customers, and a backup plan was in place

in case there might be a problem with the computer designated for the election-night

work. They also had systems in place to detect a variety of problems that might crop up

in the quality of data being fed to the computer. The broadcasters had also hedged their

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[225] Morgan W. Huff, a 1950 University of Maryland graduate who was present at the Eckert-Mauchly factory in Philadelphia on election night 1952, was early in a career in computer programming and management that required demonstrations of computer capabilities as a regular feature of the work. In a telephone interview by the author on Feb. 13, 2009, he recalled that even when demonstrations were to be run on live data, tapes from the successful operation of a particular program would be prepared as a backup. He also said that he would have available for such demonstrations a computer program that would do card tricks and another that would play music. During a 1990 conference at the Smithsonian Institution on the early years of UNIVAC history, Huff told a story about one demonstration that started disastrously when it was discovered that a magnet used to clean old data from reels of magnetic tape accidentally erased a demonstration program prepared for the Navy. The day was saved, he said, with the substitution of tapes that had the results from previous successful runs of the program; UNIVAC Conference, OH 200, oral history, May 17-18, 1990, at the Smithsonian Institution, Washington, D.C., CBI.

[226] "Tele Followup Comment." Variety, Oct. 29, 1952.

bets in various ways – primarily by continuing to use more traditional means of reporting

on returns. Collingwood had made efforts to prepare his audience, too. He wrote in his

Report to the West scripts before the election – and he would remind his audience again

early on election night – that if there were to be a mistake, it would be the fault of

humans, not the machine. But in one of those reports just two weeks before the election,

his remarks also reveal that he was not completely free of concern:

> When I left Philadelphia today I asked the scientist in charge of UNIVAC
> what he would do if UNIVAC turned out to be dead wrong. "Well," he
> said slowly, "on November 5th there's a United Fruit boat leaving for an
> obscure part of South America. If UNIVAC is wrong that's where I'll
> be."... Me too.[227]

A great deal of thought had gone into the mechanics and methodology for data

processing and analysis on election night. We can see that the application of new

computer technology offered the chance to serve election-night night's traditional tandem

imperatives – journalism on the one hand, with a premium on speedy and accurate

analysis, and showmanship on the other hand, with a premium on attracting an audience

and enhancing the news organization's prestige. But there would be no adoption of this

innovation without a willingness to take risks. The players were not blind to the risks, and

they had made efforts in advance to contain them. In the end, however, there was no

guarantee that all contingencies could be foreseen. Despite all the preparation,

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[227] Charles Collingwood, "Report to the West," script, Oct. 22, 1952, Collingwood Papers, WHS.
Collingwood repeated this story four years later when he was a featured speaker at a national computer
symposium in Chicago: Charles Collingwood, "The Election and the UNIVAC," *Proceedings of the Third
Annual Computer Applications Symposium, 9-10 October 1956* (Chicago: Armour Research Foundation of
Illinois Institute of Technology, 1956), 9-15.

Collingwood noted in his Oct. 22 script, "we're all keeping our fingers crossed here at CBS and at Remington Rand."[228]

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[228] Charles Collingwood, "Report to the West," script, Oct. 22, 1952, Box 5, Folder 12, Collingwood Papers, WHS.

Chapter 6: Cultural Competition for Attention on Election Night

On election day in 1952, Americans learned from their local newspapers about options for getting returns that evening – news they could obtain without waiting for the next day's editions. As had been the case for generations, election night would be offering up a rich confection of news, performance, promotion, and technology. Opportunities for getting election returns would appear at a wide variety of venues and at the intersection of a diverse array of interests. The mix of television and computers would be just one element in a culture-wide competition for attention.

Election Returns in Public Venues

Even the organizers of religious events were not immune from intertwining democracy's main event with their own. In Albuquerque, New Mexico, Billy Graham had just launched a month-long campaign of evangelism. Thousands of people would come each night to hear him preach at the crusade tabernacle on San Mateo Boulevard. On election day, the *Albuquerque Journal* devoted several paragraphs to a description of Graham's Bible-based sermon from the night before. And his upcoming sermon was clearly designed to offer a spiritual double entendre for a timely secular theme: "The Greatest Election Ever Held." Readers thinking about attending were assured they would not miss the results of the earthly election underway that day. Returns would be announced both before Graham's sermon and after the meeting.[1]

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[1] "Billy Graham Uses Text of St. Paul's 3 Words," *Albuquerque(N.M.) Journal*, Nov. 4, 1952, 11; and "'Greatest Election' Billy Graham Topic," *Albuquerque (N.M.) Journal*, Nov. 5, 1952, 12. An item on Billy Graham in *Editor and Publisher* on Nov. 15, 1952 (Erwin Knoll, "Evangelist Billy Graham to Write Daily Column," 58), reported: "The 34-year-old Southern Baptist minister has been conducting revivals

In Oneonta, New York, an American Legion Post was promoting a dance with old-time music from the Woodhull Boys – and election returns.[2] Regular updates on the vote count were promised at a nightspot in Jensen Beach, Florida, during an "election dinner dance" sponsored by the Jaycee-Ettes.[3] In Manhattan, ads for the National Horse Show in Madison Square Garden promised jumping contests, teams of giant Clydesdales, and "ELECTION RETURNS announced frequently tonite!"[4] In Lincoln, Arkansas, Hazel Walker's Arkansas Travelers, a women's basketball team that toured small towns playing – and beating – men's teams, would be playing that night at a local high school gymnasium. A news item in the *Northwest Arkansas Times* promised some special features. At half-time, Walker – a former All-American – would challenge all comers in a free-throw exhibition. She would shoot standing, sitting, and kneeling. And during the game, election returns would be announced every 10 minutes.[5]

At a time when a majority of Americans did not yet own a television set, businesses of all sorts offered a place to watch. In Fitchburg, Massachusetts, the La Conca d'Ora restaurant placed an ad inviting readers of the *Fitchburg Sentinel* to come watch the election returns while enjoying their favorite Italian and American foods.[6] In

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since 1942, but gained nationwide prominence when he began attracting huge crowds on the West Coast about three years ago."

[2] "Dance Tuesday, November 4," advertisement, *Oneonta (N.Y.) Star*, Nov. 4, 1952, 11.

[3] "Martin County News," *Ft. Pierce (Fla.) News-Tribune*, Nov. 4, 1952, 2.

[4] "National Horse Show," advertisement, *New York Times*, Nov. 4, 1952, 32.

[5] "Lincoln," *Northwest Arkansas Times*, Fayetteville, Nov. 4, 1952, 7; "Hazel Walker," Women's Basketball Hall of Fame, http://www.wbhof.com/2001.htm; and Pamela Grundy and Susan Shackelford, *Shattering the Glass: The Remarkable History of Women's Basketball* (New York: The New Press, 2005), 103-107.

[6] "Enjoy Your Favorite Italian and American Foods," advertisement, *Fitchburg (Mass.) Sentinel*, Nov. 4, 1952, 2.

Greeley, Colorado, a home-furnishings store placed an ad that read: "Democrats and Republicans – We cordially invite you to watch the election returns on our television sets."[7] The proprietors promised to stay open until the broadcasters went off the air. In Modesto, California, four Maddux & Van Sandt stores ran an ad that began: "If You Don't Own A TV Set … SEE THE ELECTION RETURNS on One of Ours!"[8] Two of the stores even promised "facilities for 'drive-in' television." And in New York City, commuters who would be heading home from Penn Station on the Chesapeake and Ohio Railway learned from an ad that they would not be left out of the election excitement. Trains were to carry "up-to-the-minute" election returns by way of speakers installed in "special lounge cars and coaches" – "in recognition," said the ad, "of the intense interest in the elections." [9]   Even those local television stations that did not plan to broadcast an all-election diet of programs were not blind to the fact that a complete void of election news would not be good for business. One Los Angeles-area station announced plans to televise a boxing match – Jesse Fuentes versus Willie Vaughn, live from the Olympic Auditorium – but with returns promised "throughout the evening." [10]

Across the nation, movie theaters also promised – as entertainment houses of all sorts had been doing for generations – that patrons would not miss out on the day's political theater. In Helena, Montana, the Marlow Theater advertised a "last chance" to see its feature, *The Greatest Show on Earth,* Cecile B. DeMille's 1952 hit about life in

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[7] "Jorges," advertisement, *Greeley (Colo.) Tribune*, Nov. 4, 1952, 8.

[8] "Maddux & Van Sandt," advertisement, *Modesto (Calif.) Bee*, Nov. 4, 1952. p. 11.

[9] "Ride C & O and Get Up-to-the Minute Election Returns," advertisement, *New York Times*, Nov. 3, 1952, 47.

[10] Terry Vernon, "Tele-Vues," *Long Beach (Calif.) Independent*, Nov. 4, 1952, 18.

the Ringling Brothers and Barnum & Bailey Circus.[11] Here was a movie that married the

art of the spectacle from two of spectacle's greatest names – the legendary producer-

director and the legendary circus. But the biggest, boldest letters in the Marlow Theater's

ad were reserved for another attraction: "ELECTION RETURNS."   Vote counts were to

be announced at a theater in Canandaigua, New York, where *The Miracle of Our Lady of

Fatima* was showing.[12] In Walla Walla, Washington, a set of newspaper ads for four

local theaters – including one showing "the greatest horror shows of all time,"

Frankenstein and *Dracula* – noted that at each venue, patrons could "enjoy a good

movie" and "keep up with the presidential race!"[13] In and around Oakland, California,

where several theaters were promising returns, the Paramount – featuring a screen

adaptation of Ernest Hemingway's *The Snows of Kilimanjaro* – offered election news in a

special "television lounge."[14] The entertainment industry trade publication *Variety*, in

fact, reported a few days ahead of the election that theaters around the country were "set

to fight the TV bid for attention on Election Day" in two ways – by pitching the idea that

the outcome won't be known until after theaters close and by arranging to keep patrons

posted on trends.[15] The International News Service was reported to have made a deal

with theaters to install teletype machines for $130 to $150 apiece on election night.[16]

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[11] "Marlow Theater," advertisement, *Helena (Mont.) Independent Record*, Nov. 4, 1952, 10; Bosley Crowther, "The Screen in Review; DeMille Puts 'Greatest Show on Earth' on Film for All to See -- Premiere at Music Hall," *New York Times*, Jan. 11, 1952, 11.

[12] "Playhouse," advertisement, *Canandaigua (N.Y.) Daily Messenger*, Nov. 4, 1952, 3.

[13] "Enjoy a Good Movie Tonight," advertisement, *Walla Walla (Wash.) Union Bulletin*, Nov. 4, 1952, 4.

[14] "Paramount," advertisement, *Oakland (Calif.) Tribune*, Nov. 4, 1952, 24 D.

[15] "Theatres in Pitch for Election Nite TV-ers," *Variety*, Oct. 29, 1952, 2.

[16] Ibid.

Not every theater was offering returns, and one in Oshkosh, Wisconsin, made a point of advertising *that* fact: "Got the Election Day Jitters About Who Is Going to Win Tonight?" asked its ad. "Relax and Forget for a Few Hours."[17] But another Oshkosh theater was going all out with "THE ELECTION NIGHT CLOCKWATCHER PROGRAM!" Patrons could see five movies for the price of one. Featured was *Don't Bother to Knock*, a psychological thriller starring Marilyn Monroe as a disturbed former mental patient working as a babysitter. The theater's ad didn't miss a chance to link Monroe's status as a sex symbol with the election-night theme: "Meet the new Secretary of the Exterior! Every Inch a Woman…" The theater promised "ROUND-THE-CLOCK ENTERTAINMENT WHILE YOU GET ELECTION RETURNS."[18]

In Syracuse, New York, theaters formed various election-night alliances with local print and broadcast media. The ad for one theater, RKO Keith's, suggested that with the polls closing at 9 p.m., "DECISIVE ELECTION RESULTS won't be known until late tonite [*sic*] or early tomorrow." [19] Movie-goers could take in a double feature – a Gary Cooper western and a Cesar Romero murder mystery – and hear returns courtesy of a local radio station, WSYR. A different station, WAGE, was to provide returns at Lowes's State. And at Schine's Paramount, where John Wayne and Maureen O'Hara were playing opposite each other in a romantic comedy, *The Quiet Man*, returns would be read from the stage after arriving by "direct wire" from a local newspaper.

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[17] "Time," advertisement, *Oshkosh (Wis.) Daily Northwestern*, Nov. 4, 1952, 17.

[18] "Extra! Republicans – Democrats, advertisement, *Oshkosh (Wis.) Daily Northwestern*, Nov. 4, 1952, 17; "Don't Bother to Knock," *New York Times*, n.d., http://movies2.nytimes.com/gst/movies/movie.html?v_id=14312.

[19] "RKO Keith's," *Syracuse (N.Y.) Post-Standard*, Nov. 4, 1952, 10.

In fact, as had been the practice for generations before the advent of radio and television, many of the ways in which Americans could get their election night news in real time were the creation of the newspapers themselves.   New sorts of arrangements and synergies were being conjured up, but old practices persisted, too.

Years after radio broadcasting became the dominant medium for disseminating the vote count after the polls closed, newspapers in towns across America were still holding themselves out as prime locales for live election-night news.   In Pocatello, Idaho, "election tally sheets" were to be displayed in the lobby of the *Idaho State Journal*.[20] In Rhode Island, the *Newport Daily News* ran a front-page story letting readers know that the local vote on national, state and city races and issues would be "posted on a huge board in the newspaper's counting room window."[21] The paper also promised it would announce returns "over an amplifying system to those gathered in the street."[22] In Greenville, Mississippi, a front-page headline proclaimed: "Election Party Set at *Democrat-Times*."[23] "Everybody is invited," said the story. "There will be a loudspeaker set up to broadcast the election returns to anyone who wishes to park in the street and listen to the figures as they come in…"   In Flagstaff, Arizona, readers also got a page-one invitation: "If you want to be in on the fun tonight, come on down to the SUN office."[24] "It'll be a great election party," said the *Dixon Evening Telegraph* in Illinois.

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[20] "KJRL-Journal to Provide Returns on Election," *Idaho State Journal*, Pocatello, Nov. 4, 1952, 1.

[21] "Daily News To Provide Election Returns Tonight," *Newport (R.I.) Daily News*, Nov. 4, 1952, 1.

[22] Ibid.

[23] "Election Party Set At Democrat Times," *Delta Democrat-Times*, Greenville, Miss., Nov. 4, 1952, 1.

[24] "Radio Stations to Broadcast from SUN Office," *Arizona Daily Sun*, Flagstaff, Nov. 4, 1952, 1.

"We ask you to join us."[25] In addition to the party atmosphere promised by some papers,

one in Oxnard, California, cast the newsroom activity as itself worthy of drawing

spectators: "The Press-Courier invites the public to drop in at its office at any time of the

night to watch the gathering of returns."[26]

The Oxnard paper added this caveat: "The public is requested not to phone the

newspaper, however, since lines must be kept clear for reports from the precincts."[27] But

other papers – including some of the same ones that were disseminating returns by

bulletin board – also invited calls. In Lima, Ohio, a paper serving Allen County ran a

large front-page headline – "Call 3-1610 for Returns" – above a story that said, "A staff

of veteran observers will feed Allen-co returns to telephone operators at The Lima News

thruout the night."[28] The *Lima News* was also one of a number of afternoon papers

around the country that promised extra editions available at dawn on downtown streets

and newsstands. Morning papers, meanwhile, promised to hold deadlines as long as

possible during the night or to issue extras during the morning.[29]

Many papers made plans to cooperate with broadcasters, including radio stations

owned by newspaper publishers, as was the case with the *Idaho State Journal* and its

radio station, KJRL.[30] The *Arizona Daily Sun* would be playing host to two local radio

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[25] "Evening Telegraph Will Be Open Through Night," *Dixon (Ill.) Evening Telegraph*, Nov. 4, 1952, 1.

[26] "Press, Radio To Collect Vote Total," *Oxnard (Calif.) Press-Courier*, Nov. 4, 1952, 1.

[27] Ibid.

[28] "Call 3-1610 for Returns," *Lima (Ohio) News*, Nov. 4, 1952, 1.

[29] For example, see advance on plans for extras, Charles L. Hurst, "Here's Local Breakdown On When, Where To Vote," *Florence (S.C.) Morning News*, Nov. 4, 1952, 3, 5;

[30] "KJRL-Journal to Provide Returns on Election," *Idaho State Journal*, Pocatello, Nov. 4, 1952, 1.

stations.[31] In such cases, local newspapers could be expected to supply a bigger news

staff featuring one or more seasoned political reporters and an apparatus for collecting the

area vote. The radio stations could bring live access to the listening audience and had

experience in making the narration of live events engaging.[32]

Of course, not every paper was geared up for the election-night excitement. In

Ohio, the *Athens Messenger* let readers know in a box on page seven that no one would

be on duty at the newspaper office "because of expected delays in counting due to an

anticipated heavy vote today."[33]   In Redlands, California, the *Daily Facts* also noted that

with "no contests to be decided within the city, or within the township, or within the

supervisorial district," the afternoon paper was going to close up shop on election night.[34]

Engaging the Audience: The Story of the Story, Technology, and Celebrity

The approaches in Athens and Redlands appeared to be the exception. The way

in which the election results would be gathered, aggregated, analyzed, and disseminated

was itself a story, continuing a long election-related tradition of journalism about

journalism. Newspapers reported with gusto on the arrangements they had made for what

promised to be a busy and high-stakes evening. The *Oshkosh Daily Northwestern*

boasted: "A corps of Northwestern reporters will stand by at polling places throughout

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[31] "Radio Stations to Broadcast from SUN Office," *Arizona Daily Sun*, Flagstaff., Nov. 4, 1952, 1.

[32] For example, this story – "Local Returns Emphasized; KFOX Broadcasts Election Figures," *Long Beach (Calif.) Press-Telegram*, Nov. 4, 1952, 1 – noted that the newspaper and radio station were cooperating, that "a microphone has been installed in the newsroom for fast operations" at the newspaper, and that it would be staffed by an announcer from the radio station and the newspaper's political editor.

[33] "Delay Expected In Vote Results," *Athens (Ohio) Messenger*, Athens, Ohio, Nov. 4, 1952, 7.

[34] "Facts Office Will Not Remain Open Tonight," *Redlands (Calif.) Daily Facts,* Nov. 4, 1952.

the city ready to rush the final returns to the newspaper offices."[35] At the *Oneonta Star*,

readers were asked not to call because "all telephone lines and personnel will be busy

compiling results."[36] In Ventura County, California, a local radio station and three area

newspapers had plans – reported in a front-page story in Oxnard – to pool their efforts.[37]

Technology of various sorts figured into newspapers' accounts of the way they

would report the election. One small-town paper boasted about the installation of

"special telephones … to speed returns."[38] This news was accompanied by a request for

precinct-level election officials to phone in with their tabulations – at the newspaper's

expense – as soon as possible after the count was completed.[39] A paper in Middleboro,

Kentucky, described at length the "special reporting facilities" it had arranged jointly

with a local radio station.[40] The arrangements included "a direct wire" in the county

courthouse for local and county returns, plus an "extraordinary wire system" for state and

national returns, the key being a "coast-to-coast trunk wire," from which national returns

and "trend roundups" would be relayed onto "special state and regional circuits."

Not to be outdone by the hubbub about television and computers and not to be

denied its share of the glory over election-night journalism, Western Union released

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[35] "Daily Northwestern To Bulletin Returns," *Oshkosh Wis.) Daily Northwestern*, 4, 1952, 1.

[36] "Listen to 1400; Star, WDOS to Bring Returns on Today's Election," *Oneonta (N.Y.) Star,* Nov. 4, 1952, 1.

[37] "Press, Radio To Collect Vote Total," *Oxnard (Calif.) Press-Courier*, Nov. 4, 1952, 1.

[38] "Evening Telegraph Will Be Open Through Night," *Dixon (Ill.) Evening Telegraph*, Nov. 4, 1952, 1.

[39] Similar requests appeared in other papers. See, for example, "KJRL-Journal to Provide Returns on Election," *Idaho State Journal*, Pocatello, Nov. 4, 1952, 1. And some papers reported requests from public officials for voters to do their part in the speedy tabulation of returns by voting early and avoiding the "evening rush," as reported in "Daily Northwestern To Bulletin Returns," *Oshkosh Daily Northwestern*, Oshkosh, Wis., Nov. 4, 1952, 1.

[40] "Daily News, WMIK, Plan To Give Voting Results," *Middleboro (Ky.) Daily News*, Nov. 4, 1952, 1.

figures on election day reminding the nation that the telegraph system was still an

important link in the reporting of election news. Newspaper and wire services added this

to their reporting on the reporting. More than a century after the telegraph entered the

election-night saga, this mature technological system still had the capacity to generate

wide-eyed stories. These were replete with astounding figures and accounts of the high-

stakes, behind-the-scenes drama that had made the timely transmission of election news

possible during the campaign season and right into election day.[41] One item reported that

"some 35 million words of election news have been carried by telegraph wires," making

this the "wordiest election campaign in the nation's history."[42] About a third of this total

had come from the candidates' campaign trains. Western Union had special

representatives on these trains assigned to handle the daily crush of copy coming from

some 80 to 100 reporters traveling with Eisenhower and 100 traveling with Stevenson.[43]

A 24,000-mile network just for the "flash handling of news stories" was a key element of

Western Union's system, but the human actors in that system were portrayed as equally

important. They experienced the campaign season as unseen links in the chain of

technology that transmitted election news to the American public through newspapers,

magazines, radio, and television:

> Work on a campaign train is a day and night assignment
> permitting little sleep. One Stevenson trip was called "Operation
> No Sleep." Western Union press men are used to a quick switch
> from train to plane and a motorcade trip in a cold, driving rain over

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[41] Stories include: "1952 Presidential Election Wordiest in All History, *Brainerd (Minn.) Daily Dispatch*, Nov. 4, 1952, 1, 7; and International News Service, "Wordage Record Set," *Syracuse (N.Y.) Herald-Journal*, Nov. 4, 1952, 2.

[42] International News Service, "Wordage Record Set," *Syracuse (N.Y.) Herald-Journal*, Nov. 4, 1952, 2.

[43] "1952 Presidential Election Wordiest in All History, *Brainerd (Minn.) Daily Dispatch*, Nov. 4, 1952, 1, 7.

> muddy, back-country roads adds to the challenge of getting the
> press file through under any conditions.[44]

The reporting to come on election night was expected to generate another 1.5 million words for the telegraph company.

Of course, the election-day "story of the story" in 1952 often took special note of television. Though not entirely new, television was still novel. And wonder was attached to the new coast-to-coast arrangements of the networks for transmitting images in real time. Television would be knitting the nation together as an audience after the voting had knitted people together through their common democratic act at the polling place. The United Press reported on this with dramatic flourish in a story that appeared in newspapers around the country, and in some places on the front page: "Across America, a hush will fall. There are 19,000,000 television sets now, according to a research firm, compared with 700,000 in 1948."[45] And even larger than the television audience, the size of the potential radio audience was staggering, with some "44,000,000 radio homes." This wire story, carrying on a long election-journalism tradition, even marveled at the combined global audience that would be focused on the day's upcoming events via all manner of technologies of communication, transportation, and analysis:

> The biggest audience ever tonight begins reading about, listening to, and looking at the American election finale.
> Around the world, newspapers will be held for extra editions. Radios will be tuned to returns. Bulletin boards will light up….
> Ships at sea will get the news. Transcontinental airplanes will pipe the returns to passengers in flight via loudspeaker systems….
> The Voice of America, pouring out news in 46 languages to countries outside and behind the Iron Curtain, will address itself to a

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[44] Ibid.

[45] Front-page placement of the United Press story included: "Big Audience Will Watch The Big Show," *Hayward (Calif.) Daily Review*, Nov. 4, 1952, 1; and "Biggest Audience Ever To Receive Election Results," *Valparaiso (Ind.) Vidette-Messenger*, Nov. 4, 1952, 1.

potential radio audience of 300,000,000 outside the North American continent…[46]

And then there was the technology that millions would be seeing for the first time on election night. In national wire stories, local news stories, the columns of writers covering television, newspaper ads, and on-air promotions, the computers to be employed were identified in election-day copy by monikers like those that had been applied in the weeks leading up to the vote. There was the by-now familiar "electronic brain," as well as "mental marvel," "electronic prophet," "robot computer," "electronic crystal ball," "mechanical brain," or just "the 'brain.'"[47]

A nexus of celebrities and election returns was to be a feature of election-night broadcasting in some venues. The ABC affiliate in Hollywood, KECA, was going to have a "celebrity room" where, it was said, "well-known stars will drop in from time to time to be presented." [48] Some independent television stations were making plans that included a combination of celebrity entertainers and election returns. One of these was going to broadcast an "election night 'jamboree' " at a local theater, and the public was invited to attend.[49] The bill included Lawrence Welk, a folksy favorite of older

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[46] United Press, "Big Audience Will Watch The Big Show," *Hayward (Calif.) Daily Review*, Nov. 4, 1952, 1.

[47] Examples on election day include: United Press, "Big Audience Will Watch The Big Show," *Hayward (Calif.) Daily Review*, Nov. 4, 1952, 1; Terry Vernon, "Tele-Vues," *Long Beach (Calif.) Independent*, Nov. 4, 1952, 18; "Local Returns Will Be Late, But Times And WPAY Will Be On Hand To Serve You Tonight," *Portsmouth (Ohio) Times*, Nov. 4, 1952, 1; "Big Story of 1952 Now Up to Voters; Saviers and KOLO to Flash Election Returns to Nevada," advertisement, *Reno (Nev.) Evening Gazette*, Nov. 4, 1952, 3; and a CBS station break heard at about 3:45 p.m. over WCBS-TV (New York) and the CBS Television Network, documented as "Univac to Be Used in CBS Election Coverage," transcript prepared for Remington Rand, Nov. 4, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[48] Terry Vernon, "Tele-Vues," *Long Beach (Calif.) Independent*, Nov. 4, 1952, 18. Those celebrities who had indicated they would take part included Anne Baxter, Dana Andrews, Edward Arnold, Zsa Zsa Gabor, and Dorothy Lamour.

[49] Terry Vernon, "Tele-Vues," *Long Beach (Calif.) Independent*, Nov. 4, 1952, 18.

Americans for his orchestra's fare of polkas, waltzes, and other conservative, easy-listening music.[50]

Celebrity is a matter of context, and the competition for attention on election night featured those whose names might be more familiar, locally or nationally, to followers of political news. There were local reporters known for their savvy coverage of politics. There were network television and radio reporters and commentators whose names, voices and faces were widely recognized. There were the pollsters – Roper, Gallup, Lubell. There were even leading scholars. In New York City, WNYC had lined up two of them – sociologist Robert K. Merton, a professor at Columbia University, and political scientist Harold Lasswell, a professor at Yale University – to analyze election-night trends.[51]

For the Active Audience: Scorecards and Vote-Watching Guides

For those watching or listening at home, some newspapers provided readers with the means to become their own experts, active participants in tabulating and analyzing the vote counts they were to hear over radio and television. Just as NBC sponsor Philco had circulated a 32-page national election guide before the convention-and-election season, with historical data and a place to keep track of state-by-state returns, newspapers around the country ran blank tally sheets on election day.[52] They also published "guessers'"

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[50] William H. Young, with Nancy K. Young, *The 1950s* (Westport, Conn.: Greenwood Press, 2004), 223; Terry Vernon, "Tele-Vues," *Long Beach (Calif.) Independent*, Nov. 4, 1952, 18.

[51] Sidney Lohman, "News and Notes Gathered From The Studios," *New York Times*, Nov. 2, 1952, sect. 2, 11.

[52] "Official Philco Guide to the National Political Conventions and Presidential Elections, 1952," Philco Corporation, 1952, Box 136, Folder 6 Office Files, NBC Records, WHS; a copy of this document was also obtained via eBay.com.

guides to help viewers become "experts." The demystification of special expertise and its

replacement with do-it-yourself instructions was certainly not an unknown phenomenon

in the early 1950s nor was it limited to politics. A "paint-by-numbers" craze attracted

adults who had no artistic training and newfound leisure time in their hands. Hobby kits

for assembling model trains, planes, and cars from injection-molded plastic parts sold

briskly. *Betty Crocker's Picture Cook Book*, with illustrated, step-by-step instructions,

had sold its first million copies within months of its publication in late 1950.[53] Even

homes could be built by following a best-selling how-to guide. But the invitation to be

part of the election-night forecasting excitement also had a long pedigree of its own, as

we have seen.

The do-it-yourself scorecards published on election day came in a variety of

forms and sometimes took up half a page or more – a significant amount of space hinting

at the belief of editors and publishers that readers would find this service interesting and

useful. Some of these scorecards were circulated to local papers by wire services. One

from the Associated Press announced at the top: "You Can Keep Your Own Record of

Returns."[54] It had the number of electoral votes and the number of precincts or other

voting units in each state. There was space to list returns at four separate times during the

night, and the columns for Eisenhower and Stevenson were marked by their parties' icons

– the elephant and the donkey. At least one paper – the *Kerrville Times* in western Texas

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[53] Karal Ann Marling, *As Seen on TV: The Visual Culture of Everyday Life in the 1950s* (Cambridge, Mass: Harvard University Press, 1994), 58, 60, 63, 203-206.

[54] This Associated Press scorecard, "You Can Keep Your Own Record of Returns," ran in many communities; for examples, see: *Zanesville (Ohio) Signal*, Zanesville, Ohio, Nov. 4, 1952, 2; *Austin (Minn.) Daily Herald*, Nov. 4, 1952, 12; and *Hagerstown (Md.) Daily Mail*, Nov. 4, 1952, 4.

– ran this scorecard prominently on the front page.[55] The *North Adams Transcript* in western Massachusetts gave advice on how to fill out its scorecard, which ran just above an ad urging readers to listen to the returns to be broadcast on radio from the *Transcript* newsroom.[56]

In Syracuse, the *Post-Standard* and station WSYR ran a scorecard that was even more elaborate, with detailed data from the 1948 presidential vote, including state-by-state pluralities and percentages. There were spaces to record election-night figures for county assembly seats and other races of local interest, along with historical data. The newspaper also ran a brief guide, "How to Assess Returns," with advice to compare the night's returns with the figures from the most recent elections, and somewhat ambiguous hints such as these: "It should be borne in mind that Gen. Eisenhower, to be elected, must do relatively better locally and nationally than the candidates in the last election."[57] The *New York Times* published an elaborate "guide and tally sheet."[58] It listed, for each state, the number of electoral votes and the top vote-getter in 1948. There was room to record returns, and there was a historical note or trend-spotting hint for each state. The one for Texas, for example, said: "Normally Democratic. Gov. Shivers, Democrat, endorsed Eisenhower after Stevenson backed U.S. ownership of offshore oil lands." [59] West Virginia's note said: "Normally Democratic. Coal miners for Stevenson." [60] New York's

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[55] Associated Press, "You Can Keep Your Own Record of Returns," *Kerrville (Tex.) Times*, Kerrville, Texas, Nov. 4, 1952, 1.

[56] "*Transcript* Presidential Vote Scoreboard," *North Adams (Mass.) Transcript*, Nov. 4, 1952, 7.

[57] Ibid.

[58] "Guide and Tally Sheet for the Presidential Election," *New York Times*, Nov. 4, 1952, 22.

[59] Ibid.

[60] Ibid.

note advised: "Close vote in Democratic New York City would favor Eisenhower. Close vote up-state, normally Republican, would aid Stevenson." [61] To no one's surprise, Maine's note on the presidential race said simply: "Normally Republican." [62]

In a widely printed story, the Associated Press wrote, "Two systems – neither unconditionally guaranteed – are available to election night guessers seeking to project early returns into the final outcome of the presidential race."[63] One involved watching states with "hefty" electoral votes. Just seven states had a combined total just 61 votes shy of the total needed for victory. The other system was based on the notion that "history is likely to repeat itself," so one could "concentrate on 'compass pointer' states which have generally turned up on the winner's side in past elections." [64] For example, since Theodore Roosevelt was elected in 1904, "Missouri, Montana and Idaho have picked the winner consistently in the last 12 presidential elections." [65] Three other Western states had "been 'right' since 1912." And so on.

Some papers ran stories suggesting that watching the local vote would tell observant readers how the country was going to go. In Ohio, the *Lima News* ran a front-page story that began, "Political experts from thruout America will be watching election returns from Limaland Tuesday night for an early indication of a nationwide trend."[66] The story went on to note: "It was the farm vote in half a dozen northwestern Ohio

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[61] Ibid.

[62] Ibid.

[63] See, for example, Associated Press, "Vote Counters Tonight have 2 Systems to Follow," *Brainerd (Minn.) Daily Dispatch*, Nov. 4, 1952, 2.

[64] Ibid.

[65] Ibid.

[66] "Poll Experts Eye Limaland For Vote Trend," *Lima (Ohio) News*, Nov. 4, 1952, 1.

counties which was credited by many expert observers with providing the Democratic gains which finally swung Ohio into the Truman column four years ago. Gov. Dewey conceded his defeat in 1948 only after Ohio definitely had gone for Truman, shortly before noon on the day after the election."[67] With Ohio in the Eastern time zone, watching a few of these counties – Auglaize, Putnam, Mercer, Van Wert, Shelby and Henry – could provide a "strong hint" of how farmers in the Western states would go.

In Wisconsin, the Associated Press took a bit more whimsical approach, mixing facts and figures with the wink of an eye. Running in the *Oshkosh Daily Northwestern* under the headline, "Handy Guide In Wisconsin Vote Watching," a lengthy article began by acknowledging the special place in American culture of election-night forecasting: "Vote-watching comes in for its quadrennial one-night stand as the nation's most popular parlor pastime and Wisconsin has some contests of special interest to keep track of as the votes returns come in."[68] The story went on to offer "a handy guide by which you may become your own expert and be just as confused as anyone over what's happening before the decisive totals emerge from the adding machines."[69] The counties that gave the biggest boost to Truman were listed, and then this: "If you could detect a shift in sentiment in these counties … you might make a quick reputation among your friends."[70] In the Senate race, the anti-communist crusading Republican incumbent, Joseph McCarthy, was running for reelection. While McCarthy had won by a landslide in 1946,

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[67] Ibid.

[68] Associated Press, "Handy Guide In Wisconsin Vote Watching," *Oshkosh (Wis.) Daily Northwestern*, Nov. 4, 1952, 10.

[69] Ibid.

[70] Ibid.

the story listed several counties – the ones to watch for trends – that had gone for the

Democratic presidential candidate, Truman, two years after Republican McCarthy's

election. Readers had the chance, if they followed the story's advice, to "emerge as a

minor prophet." But, the story cautioned as the final word, "don't bet on it."

National magazines, too, got in on the task of educating readers on becoming

experts at reading the election-night signs. *Collier's* did so in a piece written by two CBS

veterans, Robert Trout and Paul W. White.[71] After enjoying "a good dinner and early

movie" on Nov. 4, interested readers were invited to "sharpen a handful of pencils, sit

down by your radio or television set, spread open this issue of *Collier's*, and settle down

for some practice in the more or less fine art of keeping score." [72] Western states had the

best track record, but since they reported late, Missouri would be the best single state to

watch – "it hasn't been wrong since 1900, when it voted in favor of William Jennings

Bryan." [73] There were some good bellwether counties – Coos and Stafford in New

Hampshire, for example, and Vanderburgh in Indiana. Readers were cautioned about a

technology gap to watch for on election night: states in which the larger cities, which

tend to be more Democratic, had voting machines and hence more rapidly compiled

returns than the machine-less rural areas. An elaborate chart was published with the story.

The states were broken into three groups – "Probable Democratic," "Probable

Republican," and "In Doubt." The number of electoral votes for each was given. For

each hour between 9 p.m. and 4 a.m., the cumulative percentage of returns was listed for

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[71] Robert Trout and Paul W. White, "What to Look For on Election Night," *Collier's* 130, No. 19, for Nov. 8, 1952, 22-24.

[72] Ibid.

[73] Ibid.

the 1948 election, along with a color-coded means of spotting the hour at which "the

candidate who eventually carried the state went into the lead and never lost it." There was

also a "squeak-through column" for the states where the margin of victory was less than

two percent. After recounting some colorful stories of election-night forecasting –

including the exploits of Salo Finkelstein, the "lightning calculator" – Trout and White

concluded with an account of "an ultramodern 'mechanical brain'" to be used on at least

one network, comparing returns to figures from prior years. [74] Their account of the

tradition of election-night reporting finished this way: "Nothing better spotlights the

scientific advances of our age than the simple fact that a machine very likely will be the

first to know the identity of the thirty-third man to be President of the United States." [75]

Technology and the Times Square Tradition

The *Collier's* piece asserted that "elections are basically stories told in numbers"

– a radio sort of thing. Television's proper domain, per *Collier's*, was "pictures instead of

words and figures," a task demanding "a large share of imagination and enterprise." [76]

Trout and White predicted that television would make more use than radio had of "street

scenes like Times Square." Just as vote-watchers had little choice than to turn to the past

to make sense of the present, the turn to Times Square on election night was surely an

American reflex in 1952. In Traverse City, Michigan, in Valparaiso, Indiana, and in

Hayward, California, wire editors chose for their readers a telling United Press summary

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[74] Ibid.

[75] Ibid.

[76] Ibid.

of the way election returns would be broadcast to an audience of millions in the nation

and the world. [77] The piece included mention of several technological wonders. These

included the "electronic brains" to be featured on television and radio, but also a

paragraph or two on a unique device installed for election night in Times Square – the

"new electric election indicator" – to attract and serve the expected crowds there.

Indeed, on election night 1952, the *New York Times* wasn't leaving anything to

chance when it came to Times Square. The paper might have a reputation as serious and

elite, but it also had showmanship in its genes. And recent history suggested that

showmanship might now be more important than ever in attracting and holding an

election-night crowd. In the era of radio and then television, NBC had made efforts to

compete with Times Square by erecting election-night displays outside Rockefeller Plaza.

And in recent elections, *New York Times* reporter Meyer Berger had been among those

chronicling a change in the character and size of the Times Square crowds. The wartime

gathering in 1944 was massive – numbering between 250,000 to 500,000 – but was not as

boisterous as in earlier elections. [78] After that, both the energy and size of the crowds fell

off from what New Yorkers had come to expect in elections for city, state or national

office.[79] At first, police officials were baffled, not quite able to fathom what was taking

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[77] United Press, "Biggest Audience Ever To Receive Election Results," *Valparaiso (Ind.) Vidette-Messenger*, Nov. 4, 1952, 1; United Press, "World to Hear Vote Returns," *Traverse City (Mich.) Record-Eagle*, Nov. 4, 1952, 9; United Press, "Big Audience Will Watch The Big Show," *Hayward (Calif.) Daily Review*, Nov. 4, 1952, 1.

[78] Meyer Berger, "Roosevelt Crowd in Times Square Quiet, Very Young, Middle-Aged," *New York Times*, Nov. 8, 1944, 7.

[79] "Times Sq. is Quiet, Crowd Apathetic; No Noise, No Cheers by Smallest Election-Night Turnout Within Modern Times," *New York Times*, Nov. 7, 1945, 2; Meyer Berger, "Crowds Apathetic In Times Sq. Area; New Election Night Lows Set in Numbers and Enthusiasm, With Little Disorder," *New York Times*, Nov. 6, 1946, 5; Meyer Berger, "No Crowds Flock to Times Square; Rain Patters on Deserted Streets During the Dullest Election Night in History," *New York Times*, Nov. 5, 1947, 3.

place.[80] Reporters sensed apathy. Later, broadcasting came to be seen as a factor.[81] And

there was no small irony in the fact that broadcasters, looking to add color to their

reports, turned to Times Square. In 1948, Meyer Berger noted that radio commentators

set up camp to relay bulletins as they appeared on the *Times* display, and television

cameras were there to bring the Times Square scene into American living rooms. [82] In the

same story, Meyer declared flatly in his lead that "Times Square saw the death of a

tradition yesterday." [83] It's not that no one was there. But the thousands who did show

up were not packed shoulder to shoulder. One could even find bare spots on the

pavement. Again in 1949 and 1950, Meyer penned obituaries for the massive outdoor

gatherings of past generations.[84]

 Still, the *New York Times* wasn't ready to give up in 1952. The newspaper

management arranged for an overlapping set of technological wonders – some dating

back to the 19th century, some decades old, and some brand new – to attract attention,

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[80] See, for example, "Times Sq. is Quiet, Crowd Apathetic," *New York Times*, Nov. 7, 1945, 2: "Even veteran policemen shook their heads over this utter lack of emotionalism." And in a 1946 story, one police official was quoted as muttering, "I've seen bigger crowds at county fairs in Ireland"; Berger, "Crowds Apathetic In Times Sq. Area."

[81] Meyer Berger, "Election Night Crowd in Times Sq. Is Thin, Silent and Without Spirit; Some Observers Attribute Decline From Old Days of Teeming Throngs Alive With Noise to Lure of Radio, Television in Home," *New York Times*, Nov 3, 1948, 16; Meyer Berger, "Times Sq. Crowds Muster Thin Line; Radio and Television Blamed for Passing of an Old-Time Election-Night Tradition," *New York Times*, Nov. 9, 1949, 3. In 1950, veteran policemen were also quoted as blaming radio and television for diminished crowds in 1950: Meyer Berger, "Dwindling Crowd Threads Times Sq.; Time and the Air Waves Cut More Deeply Into Tradition and Even Whistles Go," *New York Times*, Nov. 8, 1950, 6.

[82] Berger, "Election Night Crowd in Times Sq. Is Thin, Silent and Without Spirit."

[83] *Time* magazine also took note after the 1948 election of the notably diminished Times Square activity: "The vast throng which normally invades Manhattan's Times Square with horns, bells, whistles and placards simply did not materialize. Broadway crowds were smaller than normal on any normal Saturday night." "Election Sidelights," *Time*, Nov. 8, 1948.

[84] In 1949, Berger wrote that thin crowds "confirmed the death of a tradition" and that "municipal officials in Times Square accepted the obvious obituary;" Berger, "Times Sq. Crowds Muster Thin Line." In 1950, Berger wrote: "The election night crowd tradition died a quiet death in Times Square last night, and fewer than 20,000 mourners assembled for the wake"; Berger, "Dwindling Crowd Threads Times Sq."

display the vote count, and call the election when the time was right. These non-print

media were hyped in the pages of the *Times* – repeatedly – in advance of the election.

The oldest of the technologies was the traditional searchlight that would signal the

outcome – when the newsroom was ready to do so – by a prearranged code published in

the paper.[85] The news "zipper" that circled the Times Tower with headline versions of

the news was by 1952 a mature technology – a generation after it debuted on election

night in 1928 – but it was still capable of generating excitement and its role was touted in

advance.

The newest in this mix of glitzy technological offerings on election night in 1952

was an 85-foot high "electric election indicator" running up the north wall of the Times

Tower, described in detail for readers as the culmination of months of painstaking

work.[86] It was to measure, like a giant thermometer, the rising count of electoral votes

for each candidate until one of them reached 266, the threshold for victory. It would,

predicted the *Times*, "tell the dramatic story of the election in the simplest terms." [87] A

second sign, just below the zipper, would provide periodic reports on a state-by-state

basis, one state at a time.[88]

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[85] "How Times Will Flash Election Results By Lights From Tower in Times Square," *New York Times*, Nov. 2, 1952, 76.

[86] "Times Sq. Getting Vote Result Sign," *New York Times*, Oct. 24, 1952, 25. Other stories promoting the new election indicator appeared on Nov. 3 and Nov. 4 ("Times' New Election Indicator Will Give Returns at a Glance," Nov. 3, 16, and a story with the same headline and a photograph on Nov. 4, 14). The *Times* in-house publication, *Times Talk*, reported that "initial plans for the new Times Square bulletin board had been drafted by the mechanical department last January"; See "Sweep Coverage Leaves Nothing for Sweeper," *Times Talk* 6, no. 3 (November 1952), 1.

[87] Ibid.

[88] "Times Sq. Getting Vote Result Sign," *New York Times*, Oct. 24, 1952, 25. The story included a plug for the firm constructing the sign, the Artkraft Strauss Sign Company.

The *Times* arranged to employ still other technologies of communication to get

the word out on election night far beyond Times Square, too. Every half hour, updates

were to be sent by teletype from the newsroom to 30 campus radio stations.[89] The

newspaper's own radio station, WQXR, would be setting up a 20-person news operation

for the night right in the *Times* city room, where its announcers could broadcast returns

and Washington bureau reporter William Lawrence could provide analysis. And in

addition to providing listeners with live reports from Democratic and Republican

headquarters, WXQR arranged to position an announcer in the Paramount Theater

marquee – to report on the scene in Times Square. In addition to being carried on its own

station, reports of the Times "election service" were to be carried on 21 other stations

from Boston to Washington.[90]

Times Square has been effectively studied as a place where all sorts of cultural

values have intersected – spectacle, commerce, amusement, and religion among them –

and where the very notion of a national audience for popular culture had roots predating

the ascendancy of Hollywood and broadcasting.[91] Certainly, democracy, technology, and

journalism could be added to that list of intersecting interests most salient in Times

Square on election nights.[92] And in 1952, just blocks away from Times Square, in

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[89] "Sweep Coverage Leaves Nothing for Sweeper," *Times Talk* 6, no. 3 (November 1952), 2.

[90] "Get The New York Times Election Returns vote by vote over WQXR," advertisement, *New York Times*, Nov. 2, 1952, 110; "How Times Will Flash Election Results By Lights From Tower in Times Square," *New York Times*, Nov. 2, 1952, 76.; "WQXR To Provide Election Returns," *New York Times*, Nov. 2, 1952, 66; "Sweep Coverage Leaves Nothing for Sweeper," *Times Talk* 6, no. 3 (November 1952), 2.

[91] These themes are explored in William R. Taylor, ed., *Inventing Times Square: Commerce and Culture at the Crossroads of the World* (Baltimore: The Johns Hopkins University Press, 1991), the result of a collaboration by 21 contributing scholars.

[92] I have found no comprehensive studies of the history of election night in Times Square, a subject that also tends to get little attention in book-length works on the history of Times Square and its environs.

election night spectacles originating from state-of-the-art television studios, the Monrobot and the UNIVAC were the latest iteration of election night gimmicks. They surfaced in a city famous for election night confections of news, technology, and spectacle – and in a nation wholly attuned for generations to election-night exuberance and wizardry.

The rich array of election night choices across the United States by 1952 was testimony, if nothing else, to Americans' well-established desire to know the outcome of the day's voting without undo delay and without waiting for an official tally. Around the country, newspaper editors certainly understood that their readers would not want to wait for the next day's paper to get the headlines. And so it was to be a night in which election returns would be delivered in a wide variety of venues and media, often featuring an alliance of news and entertainment – from returns at the movie theater to parties thrown by newspapers. Interests would overlap, with furniture and appliance stores seizing on the election as an opportunity to draw in customers. A range of technologies would be used. Competing arms of the news business – radio, television, newspapers, and wire services – would also find ways to collaborate. Interactivity of a sort would be featured in some places – from the invitation to watch a newsroom at work to the publication of scorecards that a broadcast audience could fill in with the help of historical data and tips on forecasting. And there would be ample reporting on the reporting, so that the diverse ways in which returns would be gathered, analyzed, and disseminated were themselves the subject of news stories. In 1952, the wondrous technologies that would be employed to carry out those tasks were also part of the story, just as they had been for more than a

century.[93] In short, the salient features of election night reporting that had been

developing for generations continued to be part of the election night scene.

And so a profound public appetite for election returns – and a long history of

satisfying it with a marriage of news, entertainment, and technology – formed an

important part of the landscape in which the "electronic brains" would make their

election-night appearances. This continuity helps us understand why, despite the costs,

difficulties and risks, computers operating live found a receptive venue for their insertion

in American culture through election-night reporting.

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[93] It had been more than a century, for example, since the *Alton Telegraph* reported following the 1848 presidential election that, due to the "facilities afforded by the magnetic telegraph," the paper received returns from as far away as Boston, New York , and Richmond several hours before returns came in from nearby precincts: *Alton Telegraph*, Nov. 19, 1848, 3, cited in Matheson, "Steam Packet to Magic Lantern," 87.

Chapter 7: Election Night 1952: After Promotions, the Live Event

The morning papers greeting Americans on Nov. 4, 1952, carried front-page headlines about violence at home and abroad. There were updates on rioting that had been underway for several days at a state prison in Columbus, Ohio, where the State Highway Patrol had fired on inmates and where the National Guard had moved in with fixed bayonets and machine guns at the ready.[1] A fierce battle for control of hilltops and ridges in the central Korean peninsula, including hand-to-hand fighting, was reported to have resulted in a deadly stalemate between Allied and Chinese Communist troops.[2] But the biggest headlines were reserved for the American elections. Wire stories carried reports on final pre-election polls in the race for the White House, with the pollsters' analyses clearly colored by caution over the embarrassments of 1948. Eisenhower was said to be ahead – but with Stevenson gaining enough ground that a victory for the Illinois Democrat was possible.[3] Beyond the drama of the presidential contest, the Democrats' hold on both the House and the Senate was at stake. Contentious races and ballot questions faced voters at the state, county, and local levels. Across the nation, a record-setting turnout was predicted.[4]

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[1] Associated Press, "Shots Persuade Some Convicts to Halt Rioting," *Oneonta (N.Y.) Star*, Oneonta, N.Y., Nov. 4, 1952, 1; "Ohio Fellows Offer Surrender in Riots; Militia In Charge," *New York Times*, Nov. 4, 1952, 1.

[2] Associated Press, "Bloody Battle of Ridges in Korea Rages On," *The Oneonta Star*, Nov. 4, 1952, 1; Lindesay Parrott, "Red Shells Repel 3 Korean Attacks Up 'Triangle Hill,' " *New York Times*, Nov. 4, 1952, 1.

[3] Associated Press, "U.S. Pollsters Remember 1948," *Oneonta (N.Y.) Star*, Nov. 4, 1952, 1; Associated Press, "Cautious Pollsters Refuse to Predict 'Sure Fire' Victor," *Albuquerque (N.M.) Journal*, Nov. 4, 1952, 1.

[4] Leo Egan, "55,000,000 Are Expected to Vote Today," *New York Times*, Nov. 4, 1952, 1; Arthur Edson, Associated Press, "Record 55 Million Vote Expected In Close '52 Presidential Race," *Oneonta (N.Y.) Star*, Nov. 4, 1952, 1; "Record County Vote Expected," *Kalispell (Mont.) Daily Inter Lake*, Nov. 4, 1952, 1.

Once the polls opened, the turnout was no longer just a subject of speculation.

Reporters in communities with afternoon papers scurried to tell the story. "Early Vote Is

Record" blared a headline in Bismarck, North Dakota.[5] "Voters Jam Polls; Set New State

Mark" was the word in Flagstaff, Arizona.[6] "Valparaiso Early Vote Heavy" appeared in

bold black type across the front page of the *Vidette Messenger* in Indiana.[7] Precinct-by-

precinct tallies were listed to back up the Valparaiso story, which reported on emergency

requisitions of extra ballot boxes. But the heavy vote wasn't just a scattered local

phenomenon. "The big news in the early hours of voting was the size of the turnout,"

reported the United Press. "It was massive."[8] Voters were said to have been "stirred up

by the roughest campaign of modern times."[9] Good weather across much of the country

helped. But even in locations with poor weather, voting was heavy. Nationwide,

estimates were that 55 to 60 million Americans would get to the polls – exceeding the

prior record, just shy of 50 million, set in 1940.[10]

The heavy turnout led the United Press to make a prediction – or an assumption –

about the counting of votes: "Not until some time Wednesday will the result be

known."[11] There was even an Associated Press story laying out a scenario, albeit remote,

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[5] "Early Vote is Record," *Bismarck (N.D.) Tribune*, Nov. 4, 1952, 1.

[6] Associated Press, "Voters Jam Polls; Set New State Record," *Arizona Daily Sun*, Flagstaff, Nov. 4, 1952, 1.

[7] "Valparaiso Early Vote Heavy," *Valparaiso (Ind.) Vidette-Messenger,* Nov. 4, 1952, 1.

[8] Lyle C. Wilson, United Press Staff Correspondent, "Residents All Over U.S. Swarm to Polls," *Valparaiso (Ind.) Vidette-Messenger,* Nov. 4, 1952, 1.

[9] Ibid.

[10] Leo Egan, "55,000,000 Are Expected to Vote Today," *New York Times*, Nov. 4, 1952, 1.

[11] Lyle C. Wilson, United Press, "Residents All Over U.S. Swarm to Polls," *Valparaiso (Ind.) Vidette-Messenger,* Nov. 4, 1952, 1.

by which the results of the election might not be known for more than two weeks.[12] It

went like this. The national vote would have to be so close that it hung on California's

32 electoral votes, and the California vote would have to be as close as it had been four

years earlier, when Truman edged out Dewey by fewer than 18,000 votes. With an

estimate of at least 150,000 absentee ballots received in California – and an unusual state

law that forbade unsealing them right away – those ballots were not due to be counted

until Nov. 21. But even without that scenario, the lack of a clear consensus that

Eisenhower was sure to win would come to affect the role computers would play on Nov.

4 in their election-reporting debut.

Election night would also provide a contrast between the wondrous place that had

been established for computers in efforts to draw an audience and the actual place allotted

to computers in the live broadcasts. Complete broadcast footage from the CBS and NBC

television networks, along with the first several hours of NBC radio and transcripts of

some brief segments on CBS radio, reveal that the computers – UNIVAC at CBS and

Monrobot at NBC – were deployed as just one way among many ways of making sense

of returns and detecting the likely outcome. Official counts from state election

authorities would not be completed and certified until well after election night. That left

to news organizations the job of informing the public of the vote tally and the outcome

that was taking shape. In the hours, days, and years after election night, a commonly told

story about the UNIVAC computer's role, in particular, would come to involve a claim

that the computer, in a prediction which was held back, had been able to detect early on

what humans could not: a sweeping victory for Eisenhower. But an examination of the

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[12] Associated Press, "Absentee Votes Could Delay Election Results Two Weeks," *Syracuse (N.Y.) Herald-Journal*, Nov. 4, 1952, 20.

broadcasts provides a chance to explore this claim and to place the computer forecasts in the context of other efforts to detect and report trends. In national broadcasts, these varied ways of knowing – not explicitly described as such, but certainly part of election night's information landscape – also included straight news reports of the vote count, commentary and context provided by journalists, on-air analysis by pollsters, the reported declarations of pundits and partisans, wire dispatches about newspapers that had called the presidential race in their own states, the statements of campaign officials, and, in the end, the speeches of the candidates themselves, including the loser's concession and the winner's acceptance of it. At the same time, broadcasts on both CBS and NBC evidenced a tension between an interest in reading the returns for clues to the outcome and cautiousness about reaching premature conclusions. As election night played out, the performance of the computers and their keepers stood to be judged both against the other ways of assessing returns and in the context of this tension between detection and restraint. And the networks themselves stood to be judged by their decisions to adapt these novelties to traditional election-night tasks – both analytical and promotional. Shortly before the election, *Business Week* had run an article about those with a stake in the outcome – other than politicians. There were the pollsters, of course, who were hoping to make out better than they had in 1948. And there were the broadcasters who were trying something new, what the headline referred to as "Robot Brains."[13] "For the electronic computers," *Business Week* observed, "it's a test of whether or not they have any real place in the Election Night hurlyburly at radio-TV studios."[14]

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[13] "Election Night: Test for Polls and Robot Brains," *Business Week*, Nov. 1, 1952, 30.

[14] Ibid., 30.

Promoting the "Brains" on Election Day

On election day, the networks continued to promote plans for election night with newspaper ads prominently featuring the reporters and commentators whose names would have been known to radio and television audiences. In New York, an ad for ABC's WJZ radio and WJZ-TV carried in large, bold letters the names of Walter Winchell, John Daly, Drew Pearson, and others.[15] Ads for the NBC and CBS broadcasts featured thumbnail photos of their star reporters and commentators – and included a mention, too, of the technological marvels the networks planned to deploy. In a CBS ad, which urged readers to "see your vote count … through the eyes of television's foremost reporters," among the photos was one of Charles Collingwood, accompanied by text indicating that he would be assigned to provide "returns and predictions as made by [the] new 'magic brain,' UNIVAC."[16] An NBC ad that occupied the entire back page of the *New York Times* reminded readers of the network's television and radio ratings victories during the political conventions. The ad had photos of a dozen broadcast journalists, together with the assignments they would have that night. It also described a massive array of other resources that would be brought to bear, including the Monrobot, along with exaggerated claims about the computer's speed: "Beginning at 8:00 on Radio and 9:00 on Television, 500 NBC experts, 1,000 newsmen in NBC's stations, and the Monrobot – America's fastest electronic brain – will bring election results, trends and

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[15] See, for example: "Starting at 8 P.M." advertisement, in *New York Times*, Nov. 4, 1952, 37, and *New York World-Telegram and Sun*, Nov. 4, 1952, 11.

[16] See, for example: "Starting at Tonight," advertisement, in *New York Times*, Nov. 4, 1952, 36.

interpretation to you as quickly as the votes are counted." [17] A smaller version of the same ad – without the images or names of the reporters but including the Monrobot – appeared elsewhere, including the *Washington Post*.[18] These ads continued a theme established in the run-up to the election that the "magic" and "electronic" brains would be an integral part of the two networks' competition to provide the most timely and comprehensible coverage.

Extant records also show that NBC and CBS were promoting their election coverage on air during the day – and featuring their "electronic brains." Available records for NBC – "Master Broadcast Reports" that survive at the Library of Congress – indicate that during election day, the Monrobot was clearly part of the network's attempt to generate excitement about its election-night offerings.[19] The computer was featured on at least three daytime programs. On the *Today* show, then in its first year as a pioneering blend of news briefs, feature stories, and conversation, host Dave Garroway is seen in these documents as playing up the Monrobot during his morning broadcast while telling viewers what to expect on election night: "Today, we're going to take you on a tour of NBC's complex election center in Studio 8-H... In about 45 minutes, we're going to have the first public showing of the center's electronic brain … Mike Monrobot … a machine that not only computes the results but analyzes what they mean."[20] NBC's Morgan

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[17] "Follow the Returns on NBC," advertisement, *New York Times*, Nov. 4, 1952, 52.

[18] "Follow the Returns on NBC," advertisement, *Washington Post*, Nov. 4, 1952, 30.

[19] Master Broadcast Reports for *Today*, *The Kate Smith Hour*, and *Advancing Human Frontiers*, Nov. 4, 1952, in NBC Television Master Books, Microfilm Box No. MT-286, NBC Collection, Library of Congress, Washington, D.C.(hereafter referred to as LOC). The "Master Broadcast Forms" include this language at the bottom when a script is included: "Master script attached represents as accurately as possible the verbal, musical and visual content of this program as actually broadcast."

[20] Master Broadcast Report for *Today,* LOC.

Beatty led the tour of Studio 8-H and appeared on camera in front of the Monrobot. A

publication of the Monroe Calculating Machine Co. – *Keynote*, a monthly in-house

magazine – reported later that Marilyn Mason, an "expert mathematician" who would

operate the Monrobot on election night, was also shown with the machine during two

segments of the *Today* show that morning.[21]

In the afternoon, viewers of NBC's *The Kate Smith Hour* were introduced to the

network's election plans by the variety show's announcer, Ted Collins, according to

NBC's record of the show.[22] Stationed at NBC's election headquarters, he said, there

were "news printers, telephones, lights, cameras, special sets, and miraculous machines

that seem like something out of Buck Rogers."[23] The viewers were promised they would

"hear and see a good deal more about these machines." Later in the show during another

segment from Studio 8-H, Collins elaborated in the network's multifaceted plans: "NBC

is certainly prepared to do this job as quickly, as accurately, and as graphically as

possible. All in all, something like 250 people – not to mention any number of machines

from the simple, old-fashioned pencil to the most complex mechanical brain, and other

interesting devices, will be devoted to keeping you informed on who's winning."[24]

Still later in the day, after *Howdy Doody, Rootie Kazootie*, *Skitch Henderson*, and

several other shows and the news, the Monrobot got another promotional outing on NBC

during *Advancing Human Frontiers*, at 7 p.m.[25] This program was designed to acquaint

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[21] "Monrobot Flashes Election Trends," *Keynote*, November 1952, 10-11, Records of Monroe Calculating Machine Co., MSB.

[22] Master Broadcast Report for *The Kate Smith Hour,* LOC.

[23] Ibid.

[24] Ibid.

[25] Master Broadcast Report for *Advancing Human Frontiers,* LOC.

viewers with the latest developments from the world of scientific research.[26] The host, Ed

Herlihy, said, per NBC's record of the show, that "the big thing we want to talk about in

the second half of the program is the tabulation of records in our NBC studios here, using

the new electronic brain machine."[27] Howard Fleming Jr., a Monrobot engineer,

explained how the machine worked, answering questions about "automatic sequence

control," the storage of results, and "uses in business."[28]

As for CBS, less detail has been found to date about the on-air election-day

promotion of its planned coverage of the voting. But there are indications that the

network was not shy about touting its election-night line-up, human and otherwise.

During a break in afternoon programming on CBS television, for example, an announcer

named some of the journalists who would be providing "trends and reports" – Edward R.

Murrow, Douglas Edwards, Don Hollenbeck, Charles Collingwood, and Lowell Thomas

– and noted that they would "be assisted by Univac, the electronic brain that works faster

than human beings can think." [29]

Behind the Scenes: Final Preparations

While CBS was confidently promoting its electronic brain, the situation behind

the scenes was hectic. At Remington Rand's Eckert-Mauchly plant on Ridge Avenue in

Philadelphia, members of the UNIVAC team were still busy checking out the programs

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[26] Ibid.

[27] Ibid.

[28] Master Broadcast Report for *Advancing Human Frontiers,* LOC*; "*Monrobot Flashes Election Trends," *Keynote*, 10-11, MSB.

[29] "Univac to be Used in CBS Election Coverage," transcript prepared for Remington Rand from CBS television broadcast, Box 6, Folder 8, Charles Collingwood Papers, WHS.

that had been developed on a tight schedule.[30] The Eckert-Mauchly Division had also

developed detailed plans for the logistics of "Project 'Election Return,'" specifying who

could be in the plant and how they would be identified.[31] There were to be green-striped

passes for visitors, white passes for employees working on the project, and red-striped

passes for employees who were normally scheduled to work at that time but would not be

working on the project. Since there were several UNIVAC computers at Ridge Avenue,

either operating or being completed, individuals working on those, such as employees of

the U.S. Census, were to be given special passes, too. Arrangements were made for

anyone who might appear on camera to sign a release, and there was a bit of advice about

appearance: "All persons likely to be in the critical area should be freshly groomed

(shaven, hair cuts, etc.) and not wear white shirts or blouses as white does not televise

well."[32] CBS would also be sending a team to take care of the remote telecast from plant.

The memo mentions "CBS engineers and technicians," and of course there would be

camera operators.[33] There is no indication in the memo that CBS would be sending a

correspondent – and none would appear from Philadelphia during the telecast. The task of

interacting on-air with the UNIVAC's keepers would fall to correspondent Charles

Collingwood, who was in the CBS election headquarters at Grand Central Terminal in

New York and had a phone line to the Philadelphia plant.[34] Teletype lines had also been

readied to transmit incoming returns from CBS to the Eckert-Mauchly group.

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[30] Mitchell and Woodbury, "How UNIVAC Predicted the Election for CBS-TV," 2, HML.

[31] "To: All persons participating in Project 'Election Return' at Ridge Avenue Plant, November 4th, 1952," memo, Eckert-Mauchly Division, Remington Rand, Box 5, Folder 3, Herman Lukoff Papers, UP-UARCH..

[32] Ibid.

[33] Ibid.

[34] Vincent, "UNIVAC and Election Predictions," speech, UP-RBML.

At NBC's headquarters at Rockefeller Center, that network's plans had included several rehearsals before election night, and now the team from the Monroe Calculating Machine Company was preparing the Monrobot for its election-night computing debut.[35] Meanwhile, invited celebrities and other guests – more than 1,000 of them – were gathering at Rockefeller Center.[36] The guests' experience had been anticipated down to the level of fine detail. Arrangements were made for food and drink.[37] NBC staffers designated as "guidettes" were in place, and NBC records include an undated script – two pages, single-spaced – that had been assembled for them, though they were to memorize whatever facts they would use from it in showing guests around the studio.[38] The script included the names of the various newsmen and their responsibilities. Among these was Morgan Beatty, who had been assigned to "interpret the findings of the Monrobot electronic brain to both radio and TV audiences."[39] The Monrobot was also mentioned a second time in the guidette's script: "Directly to your left you see the Monrobot, the electronic brain, used to compute important trends as ballot counts pour into the headquarters from 48 states."[40] Monroe was to provide pamphlets describing the

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[35] "Minutes – Election Meeting," Oct. 14, 1952, Box 314, Folder 33 Joseph O. Meyers Papers, NBC Records, WHS.

[36] C.K. Sullivan, "Preliminary Report on Election Night," memo to Edward D. Madden,   Box 569, Folder 19, Edward D. Madden Papers, NBC Records, WHS; "NBC Brings the Nation Complete, Accurate Results of Elections with Staff of 300 for Record Coverage on Radio and Television," press release, NBC, Nov. 5, 1952, NBC Trade Releases, LAB.

[37] Sullivan, "Preliminary Report on Election Night," memo.

[38] "Information for Guidettes Working Election Coverage," memo, Box 163, Folder 55, Sidney H. Eiges Papers, NBC Records, WHS.

[39] Ibid.

[40] Ibid.

machine.[41] Once the tour of the set was over, guests would be urged to take a seat in the

Studio 8-H balcony, where they could watch the action.

Broadcasting on WNBC, NBC's radio station in New York, Ed Herlihy also

described the scene for listeners at home in an early-evening preview of the coverage to

come.

> I speak to you tonight from Election Headquarters in Studio 8-H, which
> right now is just beginning to get up to speed for our complete returns of
> the election returns to you. 8-H is now full of electricians and mechanics
> and television people, all trying to get the last things together, the last
> wires in place, just so that everything will be in apple-pie order for the
> correct reporting. Now 8-H is a large studio – we think it's the largest in
> the world. It is 78 feet wide by 132 feet long, every square inch of it used
> to the best advantage. In the center of the studio … is the commentators'
> platform. Behind that, tabulating machines. To the side, the
> communications facilities which will bring in points from all over the
> country at an instant's notice. And editors, news writers, reporters, all
> flocking around, ready to take their place and do their job for you." [42]

After a discussion with several area newspaper editors who would be helping to analyze

the local and regional voting, Herlihy was joined by celebrities Jinx Falkenburg McCrary

and Faye Emerson, who would be taking part in the NBC radio coverage. Herlihy

expanded on the story-of-the-story theme, noting that this was his fifth election for NBC:

"The first one was in 1936, and the first big coverage that we ever did of elections, in a

little tiny office on the fifth floor, and when I look at this vast spectacle of 8-H tonight,

I'm just completely amazed."[43]

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[41] Ibid.

[42] Election preview, WNBC radio, New York, NY, Nov. 4, 1952; No. 319, DISC 45A, Recordings, Script
and Recording Library, NBC Records, WHS.

[43] Ibid.

CBS Television Coverage Begins

CBS launched its election-night television coverage at 8 p.m., an hour earlier than the television broadcast would begin on NBC.[44] Viewers could see for themselves what anchor Walter Cronkite would describe during the evening as a "teeming … beehive."[45] The camera opened with a long sign that said "CBS Television Election Headquarters" installed along one wall of the massive studio.[46] There was ambient sound – the click-clacking of teletype machines. Beneath the sign, and in view for the first few seconds, was a piece of equipment – about the dimensions of an organ console – with a keyboard and rows of lights that were blinking on and off. This was a UNIVAC operator's control panel, the one that had been installed on the CBS set as a prop, and the lights were just for show while the UNIVAC that would be doing the election-night forecasting was actually in Philadelphia and would introduced about 20 minutes into the broadcast.[47]

As Cronkite greeted the audience, the camera panned across one side of the studio to zoom in on the anchor's desk.   People could be seen everywhere, men and women, members of the election-night staff. Some were standing to off to one side of the anchor desk watching Cronkite. Some were milling about or moving purposefully to confer with each other, even passing in front of the camera. Others were sitting at desks loaded with telephones and stacks of paper. On either side of Cronkite were his two assistants. One

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[44] Citations for the CBS Television Network election-night coverage in this chapter are from copies at the Paley Center for Media in New York. The footage, divided into eight parts, runs from 8 p.m., Nov. 4, 1952, until about 3 a.m., Nov. 5.; this footage is identified as "Election Coverage," together with the part number, the date, and the archive, "PCM." Paley Center identification numbers for these parts are listed in the bibliography. Sources for small segments of the CBS broadcast are also listed in the bibliography.

[45] Election Coverage, part 2, CBS Television Network, Nov. 4, 1952, PCM.

[46] Election Coverage, part 1, CBS Television Network, Nov. 4, 1952, PCM.

[47] This arrangement was discussed in Chapter 5.

was a young man who appeared to be carefully checking a set of papers on the desk in front of him. The other was a woman in a dark, scoop-necked dress with a pen or pencil in one hand and a cigarette in the other. She also examined some papers, and then as Cronkite was introducing the program, she picked up one of the telephone receivers on the desk and put it to her ear. She would be giving Cronkite cues throughout the broadcast. Other sorts of activity related to the infrastructure of the broadcast would be seen throughout the night, too, including typing and calculating and the movement of cameras on rolling platforms, their cables snaking across the floor. The audience at home would be in on the excitement not only of the election but of the newsroom at work – both its sights and its sounds, including muted conversations, the periodic distant tinkle of bells – perhaps from the teletype machines – and at one point even a hammer.

Cronkite set the stage with the first news of the evening, not about the direction of the vote but its unprecedented volume: "a record turnout apparently throughout the United States." [48] He would explain in the first few minutes that there had been long lines at polling places everywhere and that the vote could reach as high as 60 million, far outstripping the previous record of under 50 million in 1940.

At the outset of the broadcast, the popular vote stood at 264,000 for Stevenson and 282,000 for Eisenhower, the numbers displayed underneath head shots of each candidate. The electoral vote standings were listed in another display which reminded viewers that 266 were needed to win. Stevenson was said to be leading in eight states worth 96 electoral votes, and Eisenhower was leading in 15 states worth 144 electoral votes. Polls had closed in 30 states, and they would close in another 12 by 9 p.m. Early

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[48] Election Coverage, part 1, CBS Television Network, Nov. 4, 1952, PCM.

returns were already trickling in from 23 states, though Cronkite reminded viewers that these were only scattered returns. [49]

Here was the start of an early tension in Cronkite's own presentation: a tension between the desire to read some meaning into the early returns, on the one hand, and to issue notes of caution, repeatedly, about the limited nature of the available information on the other hand. One could suppose any one of a number of reasons for this, from the solid journalistic practice of sticking with what is known, to the showman's imperative to hold onto an audience with the lure of an uncertain outcome. And then there was the specter of 1948. A telling memo on this issue circulated several weeks before the election to Associated Press bureaus around the country in connection with advance planning for election-night. The memo was written by Alan J. Gould, executive editor of the wire service. It included the following guidance:

> With the experience of the 1948 upset in mind, all of us must guard against any prejudging of the outcome.
> Roll out the returns as quickly as they can be tabulated. Give them proper backgrounding and they will tell their own story. [50]

In the same memo, however, it was made clear that even when the AP was not willing to declare a race over, there was news in the forecasts of other news organizations – newspapers, and especially the most notable ones or those calling the election for a candidate they had not supported:

> Bureaus should make advance arrangements with leading newspapers for forecasts on election night trends in their states. It is particularly newsworthy, of course, when a paper supporting one candidate concedes its state (or the nation) to the other candidate. Also,

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[49] Ibid.

[50] Alan J. Gould, "Election Instructions," memo to Associated Press domestic bureaus, Oct. 8, 1952, AP 02A, The General Files, Subject Files, Box 57, Associated Press Corporate Archives (hereafter referred to as APCA), New York, N.Y.

there are some papers so well known that it is news when they make a
definite statement that any candidate will carry their state – even one they
are supporting. All of this, of course, is before such time as we feel
justified in "electing" anybody on our own.[51]

On election night, such wire service dispatches would be reported by network reporters

and anchors who themselves were not comfortable making the same sort of forecasts

themselves.

About two minutes into the CBS television broadcast, Cronkite began a rundown

of the states in alphabetical order, a process that would take just eight minutes since

reports were not yet in from many, including those where the polls were still open.[52]

Despite Cronkite's tendency during the early hours of the broadcast to be cautious about

drawing definitive conclusions from limited returns, the surprises seemed to be going in

just one direction – Eisenhower's – as Cronkite's roll call came to states deemed key to

any Republican reversal of the 1948 election or states where any swing away from a

toss-up would be significant. One of the latter was Connecticut, and Cronkite reported

that Eisenhower had "jumped into an early lead in [that] pendulum state," with 13 percent

of the vote in.[53] The states of the "Solid South," a traditionally Democratic stronghold,

were also of special interest. In Florida, where Cronkite said the Republicans had hoped

to crack the Solid South, Eisenhower was also off to an early lead, though Cronkite

cautioned that most of these early returns had come from the state's "southern resort

counties," where Republican strength was expected.[54] In Kentucky, which in 1952 was

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[51] Alan J. Gould, "Election Instructions," memo, APCA.

[52] Election Coverage, part 1, CBS Television Network, Nov. 4, 1952, PCM.

[53] Ibid.

[54] Ibid.

typically considered one of the so-called border states in between the South and the band

of states from the Northeast to the Midwest, Cronkite reported a "surprising lead for the

Republican Party so far," though he noted that it had come from urban areas that tended

to vote Republican. [55] Maryland, also a border state, was described as "another one of the

bellwether pendulum states the Republicans are hoping to crack." [56] With five percent of

the vote counted, Stevenson was ahead, but just barely – 22,500 to 21,700 – and Cronkite

noted this: "The early returns are mostly from Baltimore, which should be heavily

Democratic, according to past performances, but so far the Democratic lead there is very

narrow, indeed." [57] In Ohio, Eisenhower was ahead by more than two to one. The total

vote count was not large – from about one percent of precincts – but its source was

portrayed as significant:

> Those early returns are partly from the city of Cleveland in Cuyahoga
> County and that may be an indication there that the Democrats are in some
> trouble. They need to carry Cuyahoga and Cleveland by a pretty heavy
> majority and nothing of the kind is indicated as yet from Ohio. [58]

Cronkite appeared to attach the most significance to the returns from South Carolina,

where the polls had closed two hours earlier:

> [The] Republicans are showing a large majority, a good lead in South
> Carolina, one of the states that the Republicans counted on cracking in the
> South, or thought they might crack, and so far, with nearly a fourth of the
> vote counted, in South Carolina, the first real trend seems to be indicated
> from any of the 48 states. There the Republicans running ahead by a rather
> sizable majority. [59]

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[55] Ibid.

[56] Ibid.

[57] Ibid.

[58] Ibid.

[59] Ibid.

In yet one more southern state, Tennessee, Stevenson was ahead, but just barely. Cronkite deemed it a very slim margin – the board showed 36,200 to 35,200 with almost a fourth of the vote counted. That margin was not, said Cronkite, what the Democrats "might have hoped for from their heavily populated areas of western Tennessee, where they expected to get a margin to counterbalance Republican eastern Tennessee." [60] And there was Virginia, "another state that the Republicans are counting on cracking in the South." [61] There, said Cronkite, Eisenhower had "jumped into an early lead," though he cautioned that "this might have been expected in Virginia inasmuch as that early vote is counted in the strong Arlington County and Alexandria areas outside of Washington, D.C., where Republicans were expected to gain their largest strength." [62]

In recapping, Cronkite came back to South Carolina, which he described as "the big surprise so far." [63] He explained that the state's governor, a Democrat, had endorsed the Republican candidate. And he ventured a modest assessment: "It looks as if General Eisenhower at this moment may be cracking the solid South, in South Carolina at least."[64] A few minutes later, just after 8:15 pm, Cronkite ended a review of the national vote count by returning to the situation in South Carolina once more. He termed it "the only really startling surprise in the returns." [65] And then a minute later, after noting again that polls had closed in 30 states and would close in 12 more in about 45 minutes, he offered

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[60] Ibid.

[61] Ibid.

[62] Ibid.

[63] Ibid.

[64] Ibid.

[65] Ibid.

this remark, with no elaboration: "Looks as if we're going to get an early trend tonight and it may not be very long before we see definitely which way the wind is blowing." [66]

There was some color thrown in. Eisenhower was said to be following the returns at his residence at Columbia University, where he was president. Stevenson was said to have waited in line for 30 minutes to cast his vote in Chicago. And there was a brief item on Stevenson's ex-wife and a question about how she might have voted. Cronkite also talked about several big states in which Republicans hoped to have some success – including New York, Pennsylvania, Illinois, and possibly California. In only one of these was there any trend to report – Stevenson's home state, where he was ahead due to the early returns from traditionally Democratic Cook County. Here Cronkite made use of the kind of historical data that had been employed for generations to judge early returns. "The previous Cook County margin for the Democrats has been around 54, 55, sometimes up to nearly 60 percent," he said. [67] Stevenson was running ahead in Cook County by "five to three," which would put him "considerably ahead" of the historical figures," said Cronkite, leaving the governor "in fairly good shape in his own home state."[68]

As the first 20 minutes of the broadcast came to an end, it was the UNIVAC's turn on air. Betraying no sense of a disconnect between his own cautious approach and the computer's bold task, Cronkite set up the segment this way: "And now for perhaps a prediction on how this voting is going, what the vote that is in so far means, let's turn to that miracle of the modern age, the electronic brain, UNIVAC, and Charles

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[66] Ibid.

[67] Ibid.

[68] Ibid.

Collingwood."[69] The camera panned slowly from the anchor desk to veteran CBS

newsman, who was seated and holding a large microphone attached to a harness looped

over his neck and shoulders. Behind him was the blinking UNIVAC console.

Collingwood's first task was to introduce the forecasting challenge, the

equipment, and the methodology – and to do so in terms that might be comprehensible to

his audience. His demeanor was relaxed and folksy. He began this way:

> This is the face of a UNIVAC. A UNIVAC is a fabulous
> electronic machine which we have borrowed to help us predict this
> election from the basis of the early returns as they come in. UNIVAC is
> going to try to predict the winner for us just as early as we can possibly get
> the returns in. UNIVAC lives down in Philadelphia. He's one of a family
> of electronic brains made by the Eckert-Mauchly Division of Remington
> Rand, and in a little while we'll go down there and take a look at it.
>
> But first of all, let me tell you a little bit about the theory of this.
> This is not a joke or a trick. It's an experiment. We think it's going to
> work. We don't know. We hope it'll work.[70]

Collingwood had positioned the computer as something that might tell viewers what they

most wanted to know – the election's outcome – but he had also hedged his bets by

avoiding any outright claims. He had invested the arrangement with seriousness of

purpose, and he had been direct about the risk that things might not work out as

planned.[71]

Collingwood first told the audience about how much effort had gone into the

planning: "… for the last six weeks or so, some 25 mathematicians, statisticians, and

researchers, including some of the country's best mathematical brains, have been

working on the problem which we've given to this electronic brain to try to solve for us

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[69] Ibid.

[70] Ibid.

[71] Ibid.

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tonight." [72] The theory behind their work, however, was "pretty simple," he explained. "It

is that if you knew all about previous elections, if you knew how the votes came in and so

forth, then, as the votes come in in this election, you ought to be able to compare them

with what happened in the past and judge what the result will be tonight." [73] While that

would take hundreds of people doing calculations by hand, said Collingwood, the

UNIVAC could complete hundreds and even thousands of calculations each second. The

goal was to get a "prediction from UNIVAC based on statistical principles." [74] But in case

trouble cropped up, Collingwood was absolving the machine in advance: "Now as I say,

if it does give a wrong answer, if it does make a mistake, it won't be the machine which

does it. It will be some fault of ours, some assumption that we made, something we

didn't foresee in giving it the figures." [75] This echoed of a theme Collingwood had

sounded in his radio coverage of the UNIVAC plan before the election, and it would turn

out to foreshadow some of the night's events.

What the audience saw next was the scene in Philadelphia, at the Eckert-Mauchly

plant. Collingwood continued to narrate as he gave a remote tour of the UNIVAC

installation and its various components. Collingwood's approach was to make the

equipment comprehensible – by describing various components in familiar language, by

making analogies to familiar objects, and by addressing questions directly to the machine.

In an account of the CBS-UNIVAC plan written decades later, Sig Mickelson, who in

1952 was CBS television's director of television news and public affairs, provided a

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[72] Ibid.

[73] Ibid.

[74] Ibid.

[75] Ibid.

glimpse into what might have been the thinking behind Collingwood's approach on

election night. First, according to Mickelson, the correspondent tasked with the UNIVAC

assignment would need to "have a sympathetic attitude toward the experiment."[76] There

had also been, according to Mickelson's 1989 account, a conscious assessment of just

what sort of approach – in the role assigned to the computer and in the CBS staff's

interaction with it – was most likely to minimize the risks of failure and humiliation.

Options had been weighed:

> We could take it seriously and offer election projections as serious news
> reports. If we did so, we would run the risk of being ridiculed for
> preferring the output of a machine to that of the human mind. Even worse,
> if the machine had balked or its output was patently in error, we could be
> subjected to unmerciful criticism. We could go a step further and make it
> the centerpiece of our coverage. That would greatly increase the risk and
> make us a laughingstock if for any reason it failed. Or we could slough it
> off as a gimmick and risk the loss of any benefit it might deliver.[77]

Mickelson wrote that a decision was made "humanize it, to treat it gently and

semihumorously but at the same time give full attention to the data it would produce."[78]

In addition to minimizing the risks, wrote Mickelson, this approach had another potential

benefit. It would, he wrote, "appease an audience that we speculated might not yet be

ready for overly rich doses of high technology." [79] In Collingwood, as Mickelson saw it,

the network had a correspondent who could use "a soft touch without degrading the

results," and Collingwood's "obvious warm relationship with the machine would help

deliver the mood we were seeking."[80]

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[76] Mickelson, *From Whistle Stop to Sound Bite*, 139.

[77] Ibid.

[78] Ibid.

[79] Ibid.

[80] Ibid.

As Collingwood gave his remote tour of the UNIVAC installation in Philadelphia,

where CBS had stationed a crew to transmit television images and sound, he pointed out

the control panel – looking like the one in the studio – where the operator "pushes those

keys and punches the buttons and tells it what to do." [81] There were reels of magnetic tape

– "those round things [that] look kind of like candy mints."[82] There was the "brain of

UNIVAC" against a wall, with "all those tubes and things" and some "spiny things which

are mercury tanks."[83] These, he told the audience, were UNIVAC's memory, which could

store millions of digits or characters. Playing off a cliché about keen memory,

Collingwood said of the UNIVAC, "He's got a brain that would put to shame the whole

race of elephants."[84] Next to the computer console was a piece of equipment that looked

like a typewriter. Mixing the anthropomorphic and the familiar, with a bit of the language

of a magic show, Collinwood explained:

> That's the way UNIVAC talks. When he wants to say something, the keys
> move with no hands touching them and UNIVAC says his piece. That's
> the way he communicates to us, through that typewriter there. And it's on
> that typewriter which moves without any human agency that we hope
> UNIVAC will give us his predictions.[85]

Now, it seemed to be the computer's chance to perform. Collingwood gave a cue: "Can

you say something UNIVAC? Have you got anything to say to the television

audience?"[86] But the typewriter was silent, at first. Collingwood ad libbed: "You're a

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[81] Election Coverage, part 1, CBS Television Network, Nov. 4, 1952, PCM.

[82] Ibid.

[83] Ibid.

[84] Ibid.

[85] Ibid.

[86] Ibid.

very impolite machine, I must say. But he's an awfully rapid calculator." [87] Then there

was a bit of activity, a few characters typed, and then the typing stopped. "There he

goes," said Collingwood. "What's he saying?" When the words did not seem to form a

message, Collingwood ad libbed again: "I think he's saying hi, anyway."[88]

Things did not seem to be going quite as planned. Collingwood continued after

that with his discussion of the UNIVAC's features, but when the camera returned to the

studio and focused in on Collingwood again, he tried once more to communicate with the

computer, saying: "I got so interested in telling you about UNIVAC, I forgot to ask him

what his prediction is." [89] He directed another question at it: "UNIVAC, can you tell us

what your prediction is now on the basis of the returns that we've had so far? Have you

got a prediction for us, UNIVAC?" [90] Collingwood turned around toward the console and

seemed to glance up briefly. Out of view was a large monitor that had been installed to

convey UNIVAC's output to the television audience. The camera stayed focused on

Collingwood, who seemed to be waiting for a response. But again, nothing happened.

Once more, Collingwood ad libbed. "I don't know – I think that UNIVAC is probably an

honest machine, a good deal more honest than a lot of commentators who are working,"

he said, letting out a brief chuckle, "and he doesn't think he's got enough to tell us

anything about yet, but we'll be back with him later in the evening." [91]

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[87] Ibid.

[88] Ibid.

[89] Ibid.

[90] Ibid.

[91] Ibid.

With that, Collingwood turned the broadcast back over to Cronkite. The segment had lasted five and a half minutes, but Cronkite simply moved on to his next order of business, with no comment or even reference to what had just transpired. In fact, another hour would go by before Collingwood had a second turn on camera to talk about the UNIVAC. Cronkite, meanwhile, returned to election results. Eisenhower was said to be leading in states with 154 electoral votes to Stevenson's 114. There was a report from Douglas Edwards on several Senate races. Cronkite then reiterated "the rather startling results so far" in South Carolina, where Eisenhower was in the lead with more than a quarter of the votes counted. [92] And, in noting the "rather heavy Republican majority building up in Connecticut," he added a new detail. [93] In the city of Danbury, "a normally pendulum area" that had slightly favored Democrats in previous elections, Eisenhower was running ahead by about 3,000 votes. [94] But Cronkite was not willing to draw any sweeping conclusions yet, about a half hour into the broadcast, or to explicitly connect the dots from bits and pieces of evidence in the South, the border states, the Midwest, and New England, which together might have suggested that things were not going so well for Stevenson.

Just after 8:30, it was time for a segment – some eight minutes in length – not about the election, but about the CBS arrangements for reporting on the election. Cronkite turned the floor over to veteran broadcaster Lowell Thomas, who was standing in front of the anchor desk. Thomas was asked for his thoughts on the election so far. "I'm not actually thinking about the returns at this hour," he said, explaining: "I am more

[92] Ibid.

[93] Ibid.

[94] Ibid.

interested in what is going on around me here in this house of television." [95] He

continued:

> It seems to me that television has certainly come into its own this year. At the previous election night four years ago, why, it was a case of television portraying radio. But this time, everything seems to be specially designed just for television. And if those of you who are looking in will come along with me for a moment or two, I'd like to take you on a tour of this establishment. [96]

Thomas proceeded to walk around a bit, pointing out the various features of the studio,

and directing the cameramen to show these to the audience. He called attention to various

individuals – from the managing editor to the switchboard operator. He described the

flow of news coming in by telephone and by way of 14 teletype machines from "the great

press associations and from every other source under the sun." He pointed out the large

display along one wall with state-by-state vote tallies in the presidential contest. He

pointed out the "computers," by which he meant a group of men at a desk with ordinary

calculating machines, and a cadre of uniformed young men – all wearing double-breasted

jackets and bowties – whose job it was to take the numbers from the "computers" and

post them on the presidential board. [97] There were displays for Congressional, Senate and

gubernatorial races, and a large map to show states leaning one way or the other in the

presidential contest – black for Stevenson and striped for Eisenhower. When Thomas

came to the display for presidential totals – showing Eisenhower ahead 655,000 to

Stevenson's 575,000 – he commented, "it is so early that that may not mean a thing." [98]

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[95] Ibid.

[96] Ibid.

[97] Ibid.

[98] Ibid.

One change from the past, Thomas indicated, was that not a lot of space had been set aside this time for an in-studio audience, the layout being designed primarily with the television audience in mind. "Practically all wives have been left at home," he said, "for the first time." [99] At one point in his tour, Thomas pointed out Betty Furness, pitchwoman for Westinghouse, who mugged for the camera. She was working her way around the studio taking photographs and would appear in commercials later in the program hawking a variety of products and appliances for their convenience, aesthetics, technical superiority, and novelty – from light bulbs to television sets to a clothes drying machine that bleated out the musical notes to the ditty "How Dry I Am" when its work was done.[100]

Absent from Thomas's tour was the UNIVAC. But it was there, perhaps, as an unseen foil. When introducing the "super duper engineer" in charge of the layout of all the studio gear, Thomas said of him: "From now on [he] is to be known as the mechanical brain." [101] And when introducing Sig Mickelson as the other "genius" responsible for the night's arrangements, Thomas quipped: "From now on he will probably also be known as the brain, but not the mechanical brain." [102]

At about 8:40 p.m., the first reported predictions came not from the UNIVAC or members of the CBS news staff, but from two political partisans. Republican National Chairman Arthur Summerfield was cited by Cronkite as saying "it looks like a

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[99] Ibid.

[100] Election Coverage, parts 1 to 8, CBS Television Network, Nov. 4-5, 1952, PCM.

[101] Election Coverage, part 1, CBS Television Network, Nov. 4, 1952, PCM.

[102] Ibid.

Republican landslide to him." [103] Cronkite also reported that former Minnesota Gov. Harold Stassen, who was shown among the small audience at the CBS studio, had concluded that Eisenhower would be elected by the largest popular vote ever.[104] Stassen, then president of the University of Pennsylvania, had himself been an unsuccessful candidate several times for the Republican presidential nomination.[105]

As Cronkite continued to report significant state results, he asserted shortly before 8:45 that "on the basis of these early returns, it does appear that General Eisenhower has gone into early lead in most areas including the critical areas." [106] The one exception was said to be Illinois, where the Stevenson was still in the lead owing to the vote from Democratic Cook County. But as more state results came in, there continued to be more developments in Eisenhower's favor. Oklahoma was showing greater Republican strength than had been expected. And shortly before 9 p.m., Cronkite announced, "we have a report from the *Hartford Courant* predicting that General Eisenhower is going to win the pendulum state of Connecticut this year." [107] Cronkite would repeat this prediction several times without endorsing it, and even commenting ambiguously on it a few minutes after 9 p.m. "No state has been decided as yet with the very possible exception of Connecticut," he said, but then added, "We couldn't say that. The *Hartford Courant* only is the source for that."[108] Not until about 9:45 p.m. did Cronkite report that

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[103] Ibid.

[104] Ibid.

[105] Associated Press, "Stassen behind-Scenes Worker for Eisenhower," *Baltimore Sun*, Oct. 21, 1952, 2.

[106] Election Coverage, part 1, CBS Television Network, Nov. 4, 1952, PCM.

[107] Ibid.

[108] Election Coverage, part 2, CBS Television Network, Nov. 4, 1952, PCM.

it looked like Eisenhower was going to "ring up a sizeable victory in Connecticut, where the Democrats had high hopes."[109] And it wasn't until about 10:20 p.m. that the anchor reported flatly that Eisenhower had won the state by 127,878 votes based on "complete returns."[110] This was about two hours and 40 minutes after the *Courant*'s prediction had first been circulated by the Associated Press before the CBS broadcast began.[111]

Among the notable news early in the CBS broadcast's second hour was surprising Republican strength in two areas that tended to favor Democratic candidates for president. One was Marion County, Indiana, which includes Indianapolis and which Cronkite said had slightly favored Democrats before. The other was Tarrant County around Ft. Worth, Texas, which Cronkite reported was usually heavily Democratic.[112] But then there was an odd report, given the direction of the night's events. Shorty before 9:30 p.m., Cronkite reported on the national figures, first giving Eisenhower's continuing lead in the popular vote count – more that 2.5 million to about 1.7 million. This was consistent with the details Cronkite had been reporting. But then he showed and announced the electoral vote standings, which had Stevenson ahead. The Democrat was said to be leading in 13 states with 195 electoral votes, seven more than the 188 electoral votes which Eisenhower was said to have in 22 states here he was leading. This would have likely been jarring to members of the audience who had been tuned in for awhile, but Cronkite reported these figures without comment – and then repeated the same count a few minutes later, again without explanation. It was not until 15 minutes had elapsed,

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[109] Ibid.

[110] Election Coverage, part 3, CBS Television Network, Nov. 4, 1952, PCM.

[111] "The Dispatch That Heralded Ike's Landslide," *Hartford Courant*, Nov. 9, 1952, 18.

[112] Election Coverage, part 2, CBS Television Network, Nov. 4, 1952, PCM.

just after 9:30 p.m., that Cronkite reported a new set of electoral vote standings which

had Eisenhower clearly and strongly ahead: the Republican was still leading in 22 states

again – but with 279 electoral votes showing this time, more than the 266 needed for

victory. Still, Cronkite reiterated in his conservative approach, saying "These are

scattered returns. No state is complete." [113] In addition to the lack of commentary on the

odd count that had prevailed for about 15 minutes, that count also raised a question that

was not addressed during the time Cronkite had been referring to electoral vote standings:

just what it took for CBS to list a presidential candidate as "leading" in a particular state

and what it might take to have that designation switched to "sure."

Shortly before 9:30 p.m., and immediately after the first odd report of a Stevenson

lead in the electoral vote, Cronkite set up the second UNIVAC segment this way: "And

now to find out perhaps what this all means, at least in the electronic age, let's turn to that

electronic miracle, the electronic brain, UNIVAC, with a report from Charles

Collingwood." [114] But there would be no report forthcoming from the computer just yet,

as Collingwood explained:

> UNIVAC, our fabulous mathematical brain, is down in Philadelphia
> mulling over the returns that we've sent him so far. He's sitting there in
> his corner, humming away. A few minutes ago I asked him what his
> prediction was and he sent me back a very caustic answer, for a machine.
> He said that if we continue to be so late in sending him the results, it's
> going to take him a few minutes to find out just what the prediction is
> going to be. So he's not ready yet with his prediction, but we're going to
> go to him in just a little while. [115]

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[113] Ibid.

[114] Ibid.

[115] Ibid.

Instead, Collingwood was ready with a feature – in the "story of the story" vein. He had a guest with him and made the introduction this way:

> Well you know, I got to thinking, what with UNIVAC and this studio here with all of its mechanical gadgets and its hundreds of people milling around trying to bring you the election returns, that television has never done such an elaborate piece of work as this. And I got to thinking about the days before television and radio. We have with us here in the studio sitting here beside me Mr. Harold Arlin, who is the first radio announcer. He was the first man to be an announcer on radio on station KDKA, Westinghouse station, back in 1920.[116]

Arlin, who was still with Westinghouse, had been at KDKA in Pittsburgh for several years in the early 1920s when it was a pioneering commercial radio station, and he and Collingwood reminisced about that era and the changes that had taken place in broadcasting. [117]

A few minutes after the UNIVAC was a no-show, veteran CBS correspondent Edward R. Murrow had a turn to weigh in with an analysis. Cronkite set up the segment by suggesting that Murrow would address "the big picture." [118] Murrow began with what sounded like a dig at prognosticators – both animate and inanimate – and he had a hint of mirth in his face when he did so. "As Walter Cronkite just suggested," Murrow began, "it may be possible for men or machines to draw some sweeping conclusions from the returns so far, but I am not able to do it." [119] Yet Murrow then proceeded to do something not so far afield from that, reading great meaning into the returns from a few areas in just over two minutes:

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[116] Ibid.

[117] Ibid.

[118] Ibid.

[119] Ibid.

The most surprising thing undoubtedly to date has been Connecticut. I say surprising because the Republicans did not reckon to win it by more than about forty or fifty thousand. With only a few scattered returns still to come, they have an advantage of about 110,000 in Connecticut, which certainly registers as a landslide. They carried it in 1948 by only 14,000.[120]

After pointing out that Connecticut was also sending two Republican Senators to Washington, he did some extrapolation: "The interesting point of speculation there is that a great many of the voters in Connecticut, particularly in the industrial areas, have the same interests, the same concern, as a great number of the voters in the state of New York, a crucial state, of course."[121] And he kept going:

One thing one notices in looking about over the scattered returns so far, and that is a very considerable number of communities and precincts that are switching from the Democratic to the Republican column. But we find no similar switch in the other direction.[122]

He reported on a couple of developments – that figures later than those Cronkite had just reported showed Stevenson, not Eisenhower, leading in the partial count from Massachusetts – but then Murrow concluded with a telling detail from that state. The first Massachusetts city with a complete vote count was Brockton, a place Murrow described as Democratic stronghold in the shoe industry. There, he said, Eisenhower had claimed 19,000 votes to Stevenson's 13,000.[123]

One more of CBS's notable political reporters, Eric Sevareid, would also have a chance to offer his take on the vote count just before the end of the second hour. With Sevareid seated next to him now at the anchor's desk, Cronkite asked, "Eric, how is this

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[120] Ibid.

[121] Ibid.

[122] Ibid.

[123] Ibid.

thing going in your opinion?"[124] Sevareid exhibited less professed restraint than Murrow

had shown about 20 minutes earlier, but otherwise, Sevareid's approach to reading the

signs was similar:

> Well it's still going, I think, Walter, the way it started to go at the very
> beginning. That was an Eisenhower trend from the start. I've seen nothing
> really substantial to change that. He is running far ahead of where Dewey
> ran at this time in the same places four years ago and Stevenson is running
> well behind where Truman was running in the same places four years ago.
> Where the Republicans were strong four years ago, as in Maine, for
> example, they are far stronger. And where the Democrats were very
> strong, in a good many industrial cities, such as those in New Jersey and
> places like Lynn, Massachusetts, and so on, the Democrats are far too
> weak, for happy results in those particular states from their point of
> view.[125]

Sevareid was not making a prediction, exactly, but the chances of a Democratic

turnaround were now hard to imagine without some sort of major surprise.

UNIVAC's "Rough Ride"

Just after Sevareid concluded his remarks, Cronkite said this to the audience: "So

far, as you have noted, a slight trend has begun to develop and some of our people think

the trend may be indicative of the final result."[126] It was now the beginning of the

broadcast's third hour, around 10 p.m. While no one at CBS had come right out and said

so – and while Cronkite was characterizing the trend as slight – the direction was

unmistakable. A great many indicators were pointing toward not just an Eisenhower

victory, but one with surprising strength in many places. Various players had been heard

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[124] Ibid.

[125] Election Coverage, part 3, CBS Television Network, Nov. 4, 1952, PCM.

[126] Ibid.

from on the CBS broadcast – newsmen reporting vote counts, political reporters weighing in with their analyses, at least one newspaper declaring a state result, and political figures declaring the presidential contest a landslide. On CBS radio, the public opinion analyst Samuel Lubell had weighed in at 8:35 p.m. with a key development. He mentioned having referred earlier to five indicators that should be watched for detecting whether there might be a landslide. Now, he said, based on "special telephone calls," he was ready to predict that Eisenhower would "crack the South."[127]

Before making that prediction, Lubell had posed a question to Robert Trout, anchor of the CBS radio broadcast. "First of all," said Lubell, "I want to find out, has UNIVAC reported yet?" [128] "No," replied Trout, adding in an effort at humor, "It hasn't conceded yet either." "Well then," said Lubell, "I'm ahead of UNIVAC." In fact, the UNIVAC and team of experts in Philadelphia had yet to weigh in with an on-air prediction even by 10 p.m. But that did not mean that there had been no prediction from the computer. Famously, there had, and by all accounts, it had been the prediction of a landslide. But it was not aired at the time, and its existence would not be revealed on air until after midnight.[129]

Shortly after 10 p.m., viewers watching NBC would have seen the Monrobot get its turn on air, followed by a segment on radio.[130] But at CBS, Cronkite was again engaged in another state-by-state rundown showing more developments in Eisenhower's

[127] "Lubell Gets Ahead of Univac," transcript prepared for Remington Rand from CBS radio broadcast, Nov. 4, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[128] Ibid.

[129] This will be described later in this chapter.

[130] The developments on NBC will be described later in this chapter.

favor, and then there was a brief switch to the Commodore Hotel in New York, where

Eisenhower had come not to claim victory but to greet his wildly enthusiastic followers.

No such event was being held in Springfield, where Stevenson was still ensconced in the

governor's mansion. In fact, Cronkite reported, an aide to Stevenson, Richard Nelson,

has said this soon after 10 p.m.: "The news is not good and it looks pretty grim."[131]

Cronkite noted that Stevenson's campaign manager, Wilson Wyatt, speaking "a little

later … said it's far too early to definitely say what the final result of the election will

be." [132] While trying to temper what Nelson had said, Wyatt's remarks were just as

indicative of the Stevenson campaign's defensive position at a time when the Eisenhower

camp was jubilant. It was yet another way of reading the signs. And there were more.

Several minutes before 10:30, Cronkite was reporting on more newspapers that had

called their states for Eisenhower – the *Baltimore Sun* in Maryland and the *Boston Post* in

Massachusetts. The first five percent of the vote was tallied in New York – a state with

45 electoral votes. Eisenhower was well ahead there, and he was holding on to his leads

in several pivotal southern states – including Virginia, Florida, and Texas – as more votes

rolled in. Cronkite characterized Eisenhower's lead as a "heavy majority" in the popular

vote – 4.3 to 4.1 million votes, and Eisenhower was holding on to an even more striking

differential in the electoral vote standings, where he was said to be leading in 29 states

with 293 electoral votes to Stevenson's lead in 14 states with 184 electoral votes[133].

Finally, just before 10:30 p.m. Cronkite was preparing to switch to Collingwood

for a third shot at a UNIVAC-generated prediction. "Now let's find out how our

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[131] Ibid.

[132] Ibid.

[133] Election Coverage, part 3, CBS Television Network, Nov. 4, 1952, PCM.

electronic brain is getting along on the prediction of the trend tonight," said Cronkite.

"We turn for that story to Charlie Collingwood." [134] But things were still not going as

planned. Collingwood was clearly disappointed, but he was not giving up:

> Well, as a great believer in the machine, I hesitate to say that we're having a little bit of trouble…. with UNIVAC. It seems that he's rebelling against the human element. We've fed him some figures which were a little out of line of the sort of thing that he'd been expecting, and so UNIVAC came up and said he just wouldn't work under these conditions. However, the people who operate him are so loyal to him that they say that it wasn't his fault at all, that it was their fault and our fault for giving him the returns in the wrong order. [135]

Collingwood had a few state results that he said had come from UNIVAC, and he read

the first few in alphabetical order. They contained no surprises, and Collingwood seemed

to be trying to buy some time. The camera switched briefly to Philadelphia and then back

to New York. Collingwood continued to speak, and then from off camera, someone

tapped him on the arm to get his attention, cuing him, perhaps that something was about

to happen. "Have we got anything through there yet coming up on the teleprinter?" he

asked, referring to the large video monitor, unseen by the audience, that had been

installed on a wall in the studio to display typed output from the UNIVAC as transmitted

from Philadelphia.[136] Again, Collingwood made a comment about the UNIVAC

"humming away in his corner," and then the camera once more switched to the activity at

the Eckert-Mauchly plant. Several individuals could be seen, attending in an intense way

to their work at various parts of the computer – including the console and the printer – as

if they were trying to get the computer to respond. And Collinwood was trying to get

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[134] Ibid.

[135] Ibid.

[136] Ibid.

someone to speak with him. "Have we got a return down there?" he asked. "Can anyone

down there hear me? Tell me whether we've got a national figure yet from UNIVAC?

Draper? [137] Arthur Draper, a Remington Rand executive, replied, "Yes, here."

Collingwood asked him, "Have you got a national prediction from UNIVAC?" "Yes,"

Draper answered, adding, "UNIVAC's finally come through." Collingwood asked for the

prediction, and Draper, who was heard but not seen, obliged, as the commotion around

the UNIVAC console continued: "We've got Stevenson, 20 states, Eisenhower 28 states.

That adds up to an electoral vote for Stevenson of 217, for Eisenhower 314. The

prediction on this basis is 24,456,000 and some for Stevenson, 27,445,000 for

Eisenhower. "[138]

That was it. After two and a half hours and three segments, here was a prediction

from UNIVAC that, at best, did not leave the audience with anything more than they

could already see for themselves at that point – a comfortable victory for Eisenhower, in

general terms. And the total vote predicted, at just under 52 million, was well below the

kind of turnout numbers that Cronkite had been reporting during the evening as likely.

Collingwood thanked Draper and then offered only a one-line comment: "In other

words," Collingwood summed up, "it looks as though Eisenhower is going to get it as far

as UNIVAC is concerned. Now back to Walter Cronkite." [139]

Cronkite, too, barely acknowledged the report, saying only this: "And that's the

prediction from UNIVAC, the electronic brain." [140] He then moved on from the computer

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[137] Ibid.

[138] Ibid.

[139] Ibid.

[140] Ibid.

prediction segment to a look at what he termed the "actual totals." [141] This was followed

by a report that another newspaper, the *Boston Herald*, with one sixth of the

Massachusetts vote counted, had predicted that Eisenhower would take that state. [142] For

its part, CBS now showed Eisenhower's electoral vote tally having reached and soon

surpassed 300 in states where he was deemed to be "leading," and at about 10:40 p.m. the

first state would be moved to the "sure" column. [143] It was Virginia. About 15 minutes

after the UNIVAC prediction, Cronkite returned not to Collingwood but to an

announcement with a bit more detail about UNIVAC's prediction: the associated odds of

an Eisenhower victory:

> Incidentally, you know our UNIVAC machine, our electronic brain, has
> predicted that on the basis of present returns, General Eisenhower has a
> three-to-one chance – its figures – to win this election. He would win with
> over 300 electoral votes – according to UNIVAC's prediction – the
> presidency in this year of 1952. [144]

This was the first instance in the broadcast that a UNIVAC prediction was simply

integrated into Cronkite's report as a straight news item among the various other items

that included statements – from political partisans, newspapers, and the networks' own

commentators – about the meaning of the vote. But it did not mean that Cronkite had now

irreversibly accepted the computer's prognostications as a worthy addition to the

broadcast. Any idea of doing that would be sabotaged by a bizarre report which was soon

to emerge from the UNIVAC's own camp. [145]

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[141] Ibid.

[142] Ibid.

[143] Ibid.

[144] Ibid.

[145] Ibid.

First, however, the subject of predictions in general – and their pitfalls – came up in a conversation with Robert Trout, anchor for the CBS radio broadcast, who had joined Cronkite at the television anchor's desk. [146] Shortly after Cronkite reported that a second state had been added to the "sure" column – and that there was word from Springfield of "deep gloom" setting in at Stevenson headquarters – Cronkite introduced Trout as someone who might have covered more election nights than any other CBS reporter.[147] It was nearly 11 p.m. Trout began by praising the "magnificent studio," and then made a cautious assessment: "It's been awfully dangerous to make predictions, but it certainly looks as if it is a landslide in the making." [148] Just as Murrow and Sevareid had done before him, Trout talked about all the communities around the country that seemed to be switching from Democratic to Republican in the presidential voting since the last election, and all the places that had been Republican in 1948 and were even leaning more strongly in that direction now. [149] Still, he had come armed with examples of states that had flip-flopped late on election night and into the next morning in 1948, leading him to suggest, "We'd better not be prophets so early, don't you think?" [150] Cronkite made reference to Trout's words nearly 20 minutes later – just after 11:15 – when noting that Eisenhower would win if he held onto the states where he was leading – and by a

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[146] Ibid.

[147] Election Coverage, part 4, CBS Television Network, Nov. 4, 1952, PCM.

[148] Ibid.

[149] Ibid.

[150] Ibid.

landslide – but that he was saying this "without making any predictions – that's simply

the way the vote looks at this time."[151]

All signs continued to point with increasing strength in Eisenhower's favor, but

then just around 11:30 p.m., the UNIVAC was about to stumble badly – as if some sort of

complete isolation from other election-night news had set in at the Philadelphia plant.

Cronkite turned the floor over to Collingwood, who began with great enthusiasm:

> Well UNIVAC is rolling now. UNIVAC is chewing up figures as fast as
> we can give them to him and turning out results. It's down there, in its
> corner there, all the tubes working, so let's go down to Philadelphia and
> take a look at UNIVAC as it works on the election problem that we've
> been giving it.[152]

As the camera switched to Philadelphia, Collingwood repeated the previous prediction –

Eisenhower with a margin of 314 to 217 electoral votes with odds he gave as four-to-one.

He noted that the UNIVAC had 2,000 vacuum tubes assigned to "watching" some 3,500

others "to make sure that it won't make a mistake."[153] Cued that a prediction was ready,

Collingwood asked that the camera be brought back to the studio and pointed at a screen

on which the computer's output would be shown magnified enough to be legible to the

audience. He read the prediction out as it scrolled up on the screen, and someone out of

view could be heard to say, "Aw, come on!" – as in disbelief – at what came up: 24 states

each for Stevenson and Eisenhower, with Stevenson to get more popular votes – 26

million to 25 million – but with Eisenhower edging out Stevenson in electoral votes, 270

to 261, and slim, eight-to-seven odds of an Eisenhower victory.[154] At a point in the

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[151] Ibid.

[152] Ibid.

[153] Ibid.

[154] Ibid.

evening when each fresh dispatch seemed to bring mounting evidence of a powerful win

for Eisenhower, here was UNIVAC essentially declaring the race a toss-up. "That's

even!" Collingwood said, astonished, as he first began reading out the prediction to the

television audience and came to the 24-to-24 state count. But when he was done, and

without missing a beat, he injected some humor. "If you ask me, UNIVAC is beginning

to act like a pollster," he quipped. "Anyway, this is what UNIVAC says, Walter, so now

back to Walter Cronkite." [155]

Collingwood was grinning at that point. And Cronkite also wore a bemused

expression as he, too, ad libbed, extending the man-vs.-machine comparison that

Collingwood had introduced:

> Charlie, very interesting indeed on that UNIVAC prediction… We who
> are only human and have to operate with flesh and blood instead of with
> electronic gadgets still think this thing looks like it's pretty much on the
> Eisenhower side at the moment. We'll be back to you a little later to see
> how you're getting along with that machinery over there though. [156]

A few days later, the *New York Times* critic Jack Gould would say that the UNIVAC's

on-air troubles during the evening lead several CBS stars – Cronkite, Murrow, and

Sevareid – to give it a "rough ride."[157] But Collingwood soldiered on after the latest

UNIVAC segment. He took a turn at the microphone for CBS radio listeners, where he

tried to put the best face on the computer's odd prediction, judging from a brief portion of

the broadcast captured in a transcript found among Collingwood's papers.[158]

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[155] Ibid.

[156] Ibid.

[157] Jack Gould, "C.B.S. Television Coverage of Election Returns Resulted in Landslide Victory for Network," *New York Times*, Nov. 7, 1952, 31.

[158] "UNIVAC Correctly Predicts GOP Sweep in Connecticut," transcript of segment of CBS radio election coverage, Nov. 4, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

Collingwood was introduced by a member of the CBS radio news staff as having been "out consulting with one of the mechanical marvels of the age, that CBS Radio specialty, the peculiar device known as Univac."[159] Collingwood recounted UNIVAC's election-night chronology to that point, starting with "a little trouble at first" due not to any failings of "one of the mechanical marvels of the age" but "because we gave it some figures which it didn't like."[160] "And you know," Collingwood continued, "the human element's very important in this." [161] He then told of UNIVAC's first on-air prediction of an Eisenhower win with 28 states, followed about an hour later – a few minutes before Collingwood appeared on radio – by the prediction of the thin Eisenhower victory just seen by television viewers. "I merely quote this to you as Univac's prediction," said Collingwood, who proceeded to talk about a UNIVAC prediction for Connecticut that came out at the same time as the computer's first national prediction. [162] In Collingwood's telling, this prediction was remarkable because with "only" 60 percent of Connecticut's vote in, UNIVAC had forecast an Eisenhower win in that state by 128,000, just 2,000 less than the final tally. [163] "You can't do much better than that," he said. Not mentioned was the fact that the *Hartford Courant* had called the state as a landslide for Eisenhower nearly three hours before the first UNIVAC prediction.[164]

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[159] Ibid.

[160] Ibid.

[161] Ibid.

[162] Ibid.

[163] Ibid.

[164] "The Dispatch That Heralded Ike's Landslide," *Hartford Courant*, Nov. 9, 1952, 18.

Meanwhile, a few minutes after the televised report of UNIVAC's prediction of a toss-up, Cronkite cued Murrow again for his take on the election-night developments. Murrow spoke with gravity, at a steady clip, glancing in turn at his notes, the camera, and what appeared to be a stopwatch that he picked up and held in the palm of one hand. "I think it is now reasonably certain that this election is over," he began.[165] "Traditionally, the Democratic strength comes from the big cities, and they have failed to deliver in this election." [166] He cited several – Chicago, Boston, Kansas City – where Stevenson's lead was too thin to overcome Republican strength outside the cities. He introduced yet one more way of assessing the returns on election night – a concession by New York's top state Democratic official that Eisenhower was the victor there. He concluded his analysis, 79 seconds in duration, as he had begun: "It seems clear on the basis of the big city reports, and on the general trend, that General Eisenhower has won the election."[167]

But as the camera switched back to the anchor desk, Cronkite, again exhibiting that tension that had marked his reporting from the state – between reading the signs and taking a cautious approach to saying anything that might sound like a prediction – was about to use the UNIVAC's latest utterance and a statement from a Democratic partisan in ways that served as counterpoints to Murrow's unambiguous analysis. Cronkite read out the latest vote count – Eisenhower had passed 10.3 million while Stevenson's tally was just under 9.1 million. Together, Cronkite noted, that was "not quite 20 million out of an expected 55 to 60 million total. [168] "So you see," Cronkite remarked, "that

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[165] Election Coverage, part 4, CBS Television Network, Nov. 4, 1952, PCM.

[166] Ibid.

[167] Ibid.

[168] Ibid.

prediction of UNIVAC a moment ago that perhaps this will come out with 24 states for

each of the gentlemen and Governor Stevenson with a little higher popular vote – General

Eisenhower just a four-vote or five-vote margin on the electoral side – well, with all the

votes yet to be counted, of course it's still conceivable." [169] And he followed this

immediately by passing along a statement from Sen. Estes Kefauver of Tennessee, who

had campaigned unsuccessfully for the Democratic nomination for the presidency.

Addressing a crowd of Democratic election workers, Kefauver predicted that Stevenson

would come out the victor when all the votes were in from the cities and the West. [170]

Cronkite was about to give primacy to his human colleague, Murrow, when there

soon followed an announcement that UNIVAC had issued a new prediction more in line

with Murrow's declaration. Shortly after 11:45 p.m., Cronkite interrupted a report on the

latest vote count to read out the latest results of the computer analysis, which had been

handed to him on a slip of paper by one of his assistants:

> And now, UNIVAC – UNIVAC, our electronic brain – which a moment
> ago, still thought there was a 7 to 8 chance for Governor Stevenson, says
> that the chances are 100 to 1 in favor of General Eisenhower. I might note
> that UNIVAC is running a few moments behind Ed Murrow, however. Ed
> Murrow, some 15 or 20 minutes ago said he thought it was in the bag for
> General Eisenhower. [171]

A few minutes later, Collingwood, smoking a cigarette, appeared seated next to Cronkite

at the anchor desk. After reporting that Eisenhower had "forged into a lead" in

Stevenson's home state of Illinois, Cronkite explained Collingwood's presence: "Charlie

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[169] Ibid.

[170] Ibid.

[171] Ibid.

Collingwood has a report from that electronic predictor, Mr. UNIVAC."[172] "Well, Walter," he began, "Mr. UNIVAC suffered a momentary aberration…"[173] He was referring to that brief prediction of a tight race at 8-to-7 odds before the reversal back to overwhelming odds of an Eisenhower victory. Collingwood gave details of the new prediction: Eisenhower with 424 electoral votes with just 107 for Stevenson, and the Republican with a lead on the popular vote of 29 million to 23 million. Stevenson was predicted to take only eight states. [174]

Cronkite offered no commentary, but Sevareid did so a few minutes later, just before midnight – at the end of the fourth hour of broadcasting – when it was his turn to offer an analysis. Instead of speaking first about the election, he chose to begin the brief segment by calling attention to the computer's difficulties and extending the man-vs.-machine – or journalist-vs.-machine – theme: "Well, since our time is short, Walter, I will only say that I'm delighted that UNIVAC, our machine competitor, was wrong for awhile and we were consistently right with a human voice or we'd all be victims of technological unemployment pretty soon."[175] Cronkite chuckled and replied, "I'm beginning to wonder, as I do every election night and every campaign, if there isn't a marginal point though where it'd be nice if machines *took* over."[176]

At about 20 minutes after midnight, with Eisenhower continuing to extend his lead in popular vote and electoral vote – including returns in Missouri, the home state of

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[172] Ibid.

[173] Ibid.

[174] Election Coverage, part 5, CBS Television Network, Nov. 4-5, 1952, PCM.

[175] Ibid.

[176] Ibid.

the incumbent Democratic president – Sevareid and Murrow took a turn in front of the

camera together for several minutes of analysis. Murrow spoke of the failure of the big

cities and labor unions to deliver for Stevenson. Sevareid spoke about a national mood

that may have trumped any issues, though he also said that the Korean War, inflation, and

corruption had been key. And he spoke of the importance of the individuals in the race:

"the most popular single figure in the country against a man who was utterly unknown

three months ago." [177]

Then it was back to Collingwood for what would turn out to be the final UNIVAC

appearance, just before 12:30 a.m., though the broadcast still had more than two hours to

run. Cronkite set up the three-and-a-half minute segment with a quip, foreshadowing the

kinds of remarks that would be made after election night by others who might be seen as

probing, through juxtapositions meant to be humorous, the place of computers in the

mental landscape of journalism and the culture at large:

> Now let's go over to UNIVAC, the electronic brain, which some time ago
> predicted this victory for General Eisenhower. Everyone else seems to be
> predicting the victory now for General Eisenhower, so perhaps – it is
> suggested - Univac and Charlie Collingwood can tell us who's going to
> win the World Series – next year. [178]

Collingwood picked up where he had left off about 45 minutes earlier, talking about what

he termed UNIVAC's "momentary aberration" with Eisenhower having only 8-to-7 odds

of victory.[179] Continuing with his approach of investing the machine with human – or at

least animate – characteristics, Collingwood said of UNIVAC: "… he shook himself, all

5,500 electronic tubes of him, and came up a few minutes later with a prediction that the

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[177] Ibid.

[178] Ibid.

[179] Ibid.

odds were beyond counting." Then Collingwood, suggesting that the whole episode had

been personally unsettling, gave the Remington Rand camp a chance to dig its way out:

> Now I've got a lot of faith in this machine, and I was sadly shaken by this
> aberration that it had. So let's go down to Philadelphia and see whether we
> can get an explanation of what happened to UNIVAC from Mr. Arthur
> Draper who is the head of the New Products Division of Remington
> Rand's Laboratory for Advanced Research. Art, what happened there
> when we came out with that funny prediction? [180]

The camera switched to Philadelphia. Draper was seated by the UNIVAC console. He

had a headset on and held a microphone. He had a pleasant smile on his face as he

prepared to launch into an explanation. The story that would be told for decades

afterward about UNIVAC's election-night debut would come to hinge on what he said.

Of more immediate relevance, certainly, was the near-term, and whether the election-

night difficulties could be cast into a useful narrative for Remington Rand's still nascent

commercial computer business. Draper would not only be seen on television. His words

were also broadcast on CBS radio and would be recounted – on air and in print – the next

day.[181]

"Well, we had a lot of troubles tonight," Draper began, speaking slowly and

calmly. [182] "Strangely enough they were all human and not the machine." Speaking of a

prediction that the audience never saw, Draper said: "When UNIVAC made its first

prediction with only three million votes in, it gave five states for Stevenson, 43 for

Eisenhower, 93 electoral votes for Stevenson, 438 for Eisenhower. We just plain didn't

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[180] Ibid.

[181] See, for example, "Remington Rand Man Regrets Lack of Faith in UNIVAC," transcript for Remington Rand of broadcast on station KNX, Los Angeles, Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS; Associated Press, "Electric Brain's Aberration Is All Its Masters' Fault," *Baltimore Sun*, Nov. 5, 1952, 6 a.m. edition, 8.

[182] Election Coverage, part 5, CBS Television Network, Nov. 4-5, 1952, PCM.

believe it."[183] Draper and others would say after election night that a number of factors,

including the expectation of a close race, had prompted the disbelief which first greeted

this prediction. But on election night he offered no details to the viewing audience –

about when this prediction appeared, about why it was not believed, or about who,

exactly, comprised the "we" who did not believe it. He simply moved on, attempting to

explain to Collingwood and the audience how, from that point of disbelief, the prediction

process morphed into generating something the audience did see. He used language that

might have made sense to someone steeped in the forecasting methodology but must have

been challenging for most of the audience to follow: "So we asked UNIVAC to forget a

lot of the trend information that we had put into it, assuming that that was wrong. So

UNIVAC worked on a smaller margin of knowledge. This won't give a wrong answer,

but it'll throw the odds to the extent that you saw."[184]

Draper did not elaborate. But he had, with this description, compressed two

events into one – the first prediction that had aired two and a half hours into the

broadcast, at around 10:30, which showed Eisenhower winning by an electoral vote of

314 to 217, and the second aired prediction, about an hour later, which foresaw a

Stevenson lead in the popular vote and a very close electoral vote favoring Eisenhower,

with odds of just 8 to 7. Draper did not mention these details. He wrapped up by

reiterating his message – the one that would end up at the core of the UNIVAC narrative

thereafter, which was less about what the audience saw and more about what, in Draper's

account, had happened out of view: "As more votes came in, the odds came back, and it

[183] Ibid.

[184] Ibid.

was obviously evident that we should have had nerve enough to believe the machine in the first place. It was right, we were wrong. Next year we'll believe it."[185] Collingwood jumped in: "You mean four years from now, Art?" Draper replied, "Well, yes."

Collingwood had the floor again in New York. Here was just the sort of scenario he had foreshadowed four hours earlier – a mistake – and Draper had taken the fall. "Well," said Collingwood, "I think that was very handsome of Mr. Draper and the people down there to take the blame for UNIVAC's error. It just goes to show that you can't outsmart the machine."[186] But as Collingwood extended the segment briefly to talk about one of UNIVAC's state predictions, the computer's on-air troubles were not quite over. An hour earlier, Cronkite had reported that three Massachusetts newspapers had called that state for Eisenhower, who had a significant lead in the vote count with more than one fifth of the precincts reporting, and that trend had even strengthened over the next hour with one third of the vote in.[187] So Collingwood was struck by what UNIVAC was forecasting for Massachusetts now in the early morning hours of Nov. 5: "One interesting thing is that UNIVAC still shows that Massachusetts will probably go for Stevenson," said Collingwood.[188] "We may see whether that works out right or whether UNIVAC changes its mind." He concluded the computer's election-night performance with one final iteration of the human-vs.-machine trope:

> At the moment, then, UNIVAC predicts, as everyone else is predicting now, that Eisenhower is way ahead in a big sweep. UNIVAC says he'll carry all but eight states. So that's the way it stands now with our

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[185] Ibid.

[186] Ibid.

[187] Election Coverage, parts 4 and 5, CBS Television Network, Nov. 4-5, 1952, PCM.

[188] Election Coverage, part 5, CBS Television Network, Nov. 5, 1952, PCM.

electronic brain back in working order and agreeing with all the human
brains. Now to another human brain, Walter Cronkite. [189]

Cronkite picked up the cue:

Thank you, Charlie Collingwood. I suspect that's the nicest thing that has
been said about me tonight and the nicest likely to be said. I also like that
report of Mr. Draper in Philadelphia, proving that humans shouldn't
tamper with the thinking of electronic machines. Very nice, indeed. [190]

Cronkite made no mention of that Massachusetts prediction which was as odd, under the
circumstances, as UNIVAC's brief late-night national prediction of a tight race. But just a
few minutes later, Cronkite would join those Massachusetts newspapers in describing that
state as "definitely in the Republican column" for the first time in 28 years.[191] A
subsequent Remington Rand report would reveal what the Philadelphia team did not
know at the time, despite the systems in place to screen returns and detect problems: the
vote counts given to UNIVAC for Massachusetts had been in error throughout the entire
night.[192]

UNIVAC Behind the Scenes

There are some curious features of the account Draper provided on election night
about what had happened behind the scenes at the Eckert-Mauchly plant, along with
similar accounts – in post-mortem reports, speeches, and articles – that he and several
others provided, starting immediately after the election. Some of these accounts differ
from each other in key details, or they are at variance with the content and timing of what

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[189] Ibid.

[190] Ibid.

[191] Ibid.

[192] Woodbury and Mitchell, "How Univac Predicted the Election for CBS-TV," HML, 20-21.

can be seen on the broadcast. There are also discrepancies between these behind-the-

scenes accounts and what was reported in various post-election news stories, though

some of these stories were themselves also at odds with each other or with what can be

seen in the broadcast. Such discrepancies are to be expected, perhaps. Memory can be

tricky – even in the short term – for a fast-moving set of very intense events. But the

issues raised by these discrepancies are not trivial. Versions of the seen and unseen

events from the CBS-UNIVAC collaboration have gelled over time into a standard,

incomplete, and, sometimes inaccurate narrative. The questions raised by the various

discrepancies cannot be perfectly answered with the evidence that has surfaced so far.

Even so, because much has been made over time of the claim that the computer was able

to detect early on election night what journalists using traditional means could not, a

more thorough treatment may help us assess what happened and appreciate in a more

nuanced way some of the issues surrounding this rollout of new technology in the service

of an old journalistic and cultural purpose.

What is clear from all available accounts is that at some point well before the first

on-air prediction from UNIVAC, which could be seen at around 10:30 p.m., the computer

had processed the early returns and generated at least one prediction that was met with

disbelief and was not aired.[193] This prediction was said to be based on 3.4 million votes

[193] This is a consistent element in the following accounts given by those who played a role in the UNIVAC-CBS operation: Lukoff, *From Dits to Bits*, 127-131; Mickelson, *From Whistle Stop to Sound Bite*, 137-141; Mickelson, *The Electric Mirror*, 80-82; A.F. Draper, "UNIVAC on Election Night," *Electrical Engineering*, April 1953, 291-293; A.F. Draper, "UNIVAC on Election Night," paper presented at AIEE Meeting, Jan. 22, 1953, HML; Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," which was discussed in Chapter 1 and of which two versions were found in three archival collections (Sperry-UNINAC Company Records, HML; John W, Mauchly Papers, UP-RBML; and Computer Documents, NMAH); A.C. Hancock, "UNIVAC Beats Statisticians on Election Night," *Systems Magazine*, December 1952, reprint in Box 185, File: "UNIVAC I / UNIVAC, Election Night 1952," Computer Documents, NMAH; Vincent, "UNIVAC and Election Predictions," speech, UP-RBML This element also appears in a commonly cited account by an individual who later worked as a public information director for

counted at that point in the evening – a figure sometimes rounded down or up. And it was said to foresee an overwhelming victory by Eisenhower – by 438 to 93 in electoral votes, by 43 to 5 in states won, and by a popular vote of about 33 million to about 19 million, with overall odds of an Eisenhower victory figured at or above 100 to 1. There are several documents that have been described as copies of the actual printout of this prediction, which in each is preceded by these two lines:

> IT'S AWFULLY EARLY, BUT I'LL GO OUT ON A LIMB.
> UNIVAC PREDICTS -- with 3,398,745 votes in -- [194]

In some of these versions the odds in favor of an Eisenhower victory are listed as "100 to 1" and in others as "00 to 1." The latter – "00 to 1" – was said to have been a result of the programmers not accounting for odds of victory so large that three digits would be needed to express them.[195] Some of these copies have a handwritten notation – "8:30 PM" – at the top, though in different handwriting on different versions. But what they all have in common is that they lack a computer-generated time stamp.

What is not certain – though it is relevant to the larger discussion of the computer's touted election-night advantage – is just when this early prediction of a

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Sperry Rand and had access both to some of the individuals involved and to related documents: Wulforst, *Breakthrough to the Computer Age*, 161-171.

[194] Versions of this document were found in these locations: as a copy reproduced in Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," HML; as a copy in Box 388, Sperry-UNIVAC Company Records, HML; in Lukoff, *From Dits to Bits*, 130; as a copy in Box 3:C:8, Folder 191, John W. Mauchly Papers, UP-RBML; as a copy provided by staff of the National Museum of American History of the item listed as "Original UNIVAC Printout of Election '52 Prediction," including the handwritten notation "property of Grace M. Hopper," which is archived in Box 5, Folder 10, Series 5, Eckert-Mauchly Computer Corporation, 1949-1965, Grace Murray Hopper Papers, Collection 324, Archives Center, NMAH; as reproduced in a Sperry-UNIVAC promotional poster commemorating the UNIVAC role in the 1952 election, Oversize Materials, Herman Lukoff Papers, UP-UARC. In addition, an original computer printout was made available by Thomas J. Bergin, formerly of American University, from his collection of artifacts in the history of computing. An image of one version of the UNIVAC prediction printout appears in a Unisys promotional film about the UNIVAC role in the 1952 election broadcast, a digital copy of which was provided by the Computer History Museum, Mountain View, Calif.

[195] Lukoff, *From Dits to Bits*, 130-131.

landslide was generated. Because of the fast-moving nature of any election night – and this one in particular, as evidence of an Eisenhower victory mounted steadily – the time of UNIVAC's early prediction would be useful to assess. The most commonly cited time given for the first prediction was 8:30 p.m. – including the time cited in a subsequent account by Draper – but there are also accounts that give the time as 9:15 p.m., including one written by Arch Hancock, the Remington Rand publicist.[196] In fact, as discussed in Chapter 1, a report from the Eckert-Mauchly Division prepared after the election and authored by two participants – Max Woodbury, the University of Pennsylvania statistics expert, and Herbert F. Mitchell Jr., head of the UNIVAC Applications Department – has turned up in two versions that are virtually identical except for this one detail – 8:30 p.m. in one version and 9:15 p.m. in the other.[197]

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[196] The 8:30 time, for example, is mentioned in a Draper speech and article following the election: A.F. Draper, "UNIVAC on Election Night," paper presented at AIEE Meeting, Jan. 22, 1953, HML; and A.F. Draper, "UNIVAC on Election Night," *Electrical Engineering*, April 1953, 291-293. It is also the time given by, among others, Lukoff in *From Dits to Bits* (p. 130) and Mickelson in *From Whistle Stop to Sound Bite* (p. 140). The 8:30 time also appears in some contemporary news accounts, including the script of a next-day radio news broadcast on KYW in Eckert-Mauchly's hometown, Philadelphia ("Script as Broadcast," KYW, Nov. 5, 1952, 6:15 p.m., Sperry-UNIVAC Company Records, Box 382, file "Sperry Univac – History – 1950's," HML). But another Philadelphia news organization, the *Philadelphia Evening Bulletin*, ran a story giving the time of the first prediction as 9:15 p.m. (George Staab, "Electronic Brain Whirs and Purrs: 'Landslide,'" Nov. 5, 1952, 3). Meanwhile, among those reporting the time as 9:15 was Remington Rand publicist Arch Hancock in a post-election article in a Remington Rand publication, *Systems Magazine;* Hancock, "UNIVAC Beats Statisticians on Election Night," NMAH. Note that "A.C. Hancock" and "Arch Hancock" are the same person, per identification in a Nov. 12, 1952, letter in which his name appears both ways his title is given as "Director, Publicity-Publications," on Remington Rand stationery; A.C. Hancock to Walter Cronkite, letter, Nov. 12, 1952, Folders: Fan Mail, 1952-52, Walter Cronkite Papers, DB-CAH.

[197] As noted in Chapter 1, the 8:30 time appears in the version of Woodbury and Mitchell, "How Univac Predicted the Election for CBS-TV" in the Sperry-UNIVAC Company Records at the Hagley Museum and Library and in the John W. Mauchly Papers at the Rare Books and Manuscripts Library, University of Pennsylvania. The version giving the time as 9:15 is in a version of this report in Computer Documents, National Museum of American History, Washington, D.C. It is also worth noting that in each of these reports, there is a chart listing the results of a post-mortem experiment repeating the process of generating the predictions "free from the pressures of election night excitement." This chart has one list of "Should have been" predictions, with times, and one list of "As released" predictions, with times. Neither set of figures or their times correspond to what was seen on television at any point, but the first "Should have been" prediction of 438 to 93 electoral votes in the copies from the Sperry-UNIVAC Company Records (at Hagley) and in the Mauchly Papers (at the Rare Books and Manuscripts Library) is listed on p. 20 as 8:15

One possible clue to the time of the first, unaired prediction of a landslide is the vote count on which it was said to have been based – that figure typically given as of 3.4 million, similar to the round figure of 3 million votes mentioned by Draper during his mea culpa for the CBS audience.[198] This is one of the curious features of Draper's and others' accounts, and checking it against other available evidence provides a sense of the difficulties in saying for certain just what happened, and when, behind the scenes at the Eckert-Mauchly plant on election night. In short, there do not appear to have been 3.4 million votes available to analyze until well after 8:30. And that does not take into consideration the lead time needed to ready the data for analysis nor the several minutes needed to run the computer program.[199] By all accounts, the vote counts being used by the UNIVAC team in Philadelphia were coming via teletype from the CBS election headquarters in New York.[200] CBS was relying primarily on wire service reports for vote counts, which were being posted on displays in the studio and being passed on to Cronkite, who, in turn, updated viewers frequently. Cronkite opened the broadcast at 8 p.m. with a total combined vote under 600,000. At about 8:30 p.m., just after the segment

p.m. – as opposed to the 8:30 p.m. that appears in the narrative of those reports. A similar chart in the Smithsonian copy of the document (on p. 21) lists 9:15 as the time of that prediction, but this version of the report also includes a retyped copy of the prediction (as opposed to a photocopy) in the report (between pages 2 and 3), and it includes the notation "8:30 p.m." as the apparent time of this prediction. Adding to the mystery, in the Herman Lukoff Papers (Box 5, Folder 3, UP-UARC), there is a photocopy of the list from of the page (p. 20) containing the "Should have been" and "As released" section of the report that looks identical to the Hagley and Mauchly copies, but in place of the times and figures, it appears that the times and figures from the other version (p. 21 in the copy found at the Smithsonian) have been pasted in – showing 9:15 as the time of the first 348-93 prediction. Meanwhile, in the account in Lukoff's 1979 book, *From Dits to Bits*, he gives the time of the first prediction as 8:30 p.m. (p. 130).

[198] In an account he prepared after the election, Draper said that at 8:30 p.m. "slightly over 3,000,000" scattered returns were in and were used to generate the first prediction; Draper, "UNIVAC on Election Night," *Electrical Engineering*, 292

[199] Woodbury and Mitchell reported that five minutes were needed for the program to run; "How UNIVAC Predicted the Election for CBS-TV," 15, HML.

[200] See, for example, Draper, "UNIVAC on Election Night," *Electrical Engineering*, 292.

in which Collingwood introduced the UNIVAC, the total vote count was about 1.2

million.[201] At 9 p.m. the total vote had reached 2.4 million. The tally shown to CBS

viewers first topped 3 million a few minutes before 9:15 p.m. and stood at 4.1 million by

about 9:20 p.m.[202] These figures are also consistent with an early edition of the *Baltimore*

Sun reporting that at 9 p.m., the national vote count for Eisenhower and Stevenson

combined stood at about 3.4 million.[203] And just to complicate the picture further, the

International News Service generated a dispatch that ran in the *Hartford Courant* the day

after the election reporting the UNIVAC forecast of an Eisenhower win with 314

electoral votes – the one the television audience saw at about 10:30 – was based on

3,398,745 votes – in other words, the precise figure that would later be said to have been

the basis of the never-aired 8:30 prediction.[204]

Another important feature of Draper's early-morning confession was the reaction

to the initial UNIVAC prediction of a landslide – disbelief – and a few more details

turned up in subsequent accounts. In their post-election report, Max Woodbury and

Herbert Mitchell wrote of what happened as that prediction appeared on UNIVAC's

printer and clashed with pre-election forecasts of a close race:

> [T]here was a hurried consultation among the top Remington Rand people
> present and Dr. Woodbury. Could this prediction be correct? In view of
> the obvious state of fatigue of all of us who had programmed the job and

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[201] Election Coverage, part 1, CBS Television Network, Nov. 4, 1952.

[202] Election Coverage, part 2, CBS Television Network, Nov. 4, 1952, PCM

[203] Dewey L. Fleming, "Ike Out In Front in 23 States With Stevenson Holding Advantage in 11," *Baltimore Sun*, Nov. 5, 1952, edition B*, 1.

[204] International News Service, "Univac, Electronic Brain, Figured Ike 4 to 1," *Hartford Courant*, Nov. 5, 1952, 2.

the lack of time to test the entire procedure on prior election data, it was
decided that it would be too risky to release this prediction.[205]

Herman Lukoff, the engineer in charge of keeping the UNIVAC in working order, gave a

similar account in his memoir. "Our election officials, Herb Mitchell, Max Woodbury,

Art Draper, and Phil Vincent looked on in disbelief," he wrote. "The officials put their

heads together and said 'We can't let this go out. The risk is too great.'"[206]

Vincent's account, in a speech given a few years later, included this observation:

"Unfortunately, some of us had more confidence in the Gallup Poll prediction than in the

UNIVAC extrapolation, and decided that the machine could not possibly be right."[207]

After the election, Draper would credit several factors for the disbelief that met the first

prediction. The expectation of a close race was one. There was also the fact that the

prediction had been based on a small fraction of all votes cast, that it gave a number of

southern states to Eisenhower, including states with barely any returns, and that there

were many states for which votes had not yet begun to come in at all. Under those

circumstances, "it was beyond comprehension," said Draper, "that the machine could

predict with such a degree of certainty that the odds would be greater than 100 to 1."[208]

Following the original stunned reaction, the next reaction, according to those

involved, was to look for programming errors. And finding none, the next step after that

was to water down the part of the program that had detected a wide swing away from

previous voting history and applied that swing to areas with votes that had not yet come

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[205] Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," pp. 19, 2, HML.

[206] Lukoff, *From Dits to Bits*, 130-131.

[207] Vincent, "UNIVAC and Election Predictions," speech, 5, UP-RBML.

[208] Draper, "UNIVAC on Election Night," *Electrical Engineering*, 293.

in. As the evening wore on, according to these accounts, the mounting raw vote swung

the prediction back to 100-to-one odds of an Eisenhower victory.[209] Not clear is exactly

how all of this translated into the UNIVAC predictions seen and heard during the evening

on CBS: the 314-to-217 electoral vote in Eisenhower's favor at around 10:30 p.m.; the

very close 270-to-261 electoral vote prediction at odds of just eight-to-seven at around

11:30 p.m.; the 100-to-one odds of an Eisenhower victory announced by Cronkite at

around 11:45 p.m.; and the details provided by Collingwood a few minutes later that gave

these odds as greater than 100-to-one, with Eisenhower taking 424 electoral votes and all

but eight states. A number of accounts of behind-the-scenes activity and how that

translated into results released to the CBS audience are at variance – in the number,

chronology, and timing of various predictions – both with each other and with what can

be seen in the broadcast itself. [210]

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[209] Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," 19, HML; Draper, "UNIVAC on Election Night," *Electrical Engineering*, 293.

[210] Examples of variations in the accounts of the participants as to the number, timing, and content of various predictions include the following. The Woodbury-Mitchell report suggested that the prediction actually sent to CBS first for broadcasting was the one that had Eisenhower and Stevenson with 24 states each and eight-to-seven odds for Eisenhower, with a another report of 376 to 155 electoral votes and 10-to-one odds as being the subsequent one with the "sudden shift [that] called for an explanation to the television audience" by Draper (Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," 19-20, HML). After the initial landslide prediction that was not aired, Draper's written account mentioned a single prediction – one that had been "changed enough to make the election look close" and was broadcast – and that this was a mistake that was realized after 10 minutes, when the prediction "swung back again to the Eisenhower landslide." (Draper, "UNIVAC on Election Night," *Electrical Engineering*, 291-293). Lukoff wrote that after the first landslide prediction, there was a change in the program but it still produced "overwhelming" results, and that a "third try" produced the "mitigated results" – with the eight-to-seven odds – that he said were broadcast at 9:15 p.m. (Lukoff, *From Dits to Bits*, 131). Mickelson's account said that after the first landslide prediction, the next prediction – which he said was transmitted to CBS at 9 p.m. – had the odds at eight-to-seven, which he said had been due in part to an extra zero added to Stevenson's New York totals. He wrote that the mistake was corrected 15 minutes later with odds of 100-to-1 (Mickelson, *From Whistle Stop to Sound Bite*, 140) Mickelson provided a similar account in *The Electric Mirror* (p. 82). Wulforst, who was not involved at the time but later became a publicist for UNIVAC's manufacturer, wrote in *Breakthrough to the Computer Age* (pp. 167-170) that there was an arbitrary change in the factor used for extrapolation, leading to a prediction that gave Eisenhower 28 states and 317 votes. The UNIVAC team was said to remain displeased with this and to have "tweaked the formula again," resulting in the 270-to-261 prediction, which he said was given to CBS and aired at 10 p.m. Wulforst gave 11 p.m. as the time that UNIVAC, "shrugging off the dampening influence of the twice-

One other part of the behind-the-scenes story that has not been fully resolved by available accounts is whether the UNIVAC team in Philadelphia made a unilateral decision to withhold the first prediction of a landslide from CBS, or whether members of the CBS staff in New York knew of it and were involved in the decision not to air it. The various accounts by those working on the UNIVAC predictions in Philadelphia contain no suggestion that CBS was informed of that first prediction.[211] And in some cases, the accounts suggest that the initial prediction was withheld and that only later was a subsequent prediction deemed okay to release to CBS.[212] In an account published in 1972, Mickelson wrote that the initial projection of a landslide was not released to "the impatient CBS news executives who were not aware at that time that one run had been made."[213] Consistent with this is another account he published in 1989, in which he describes the decision to withhold the first prediction as having been made in Philadelphia.[214] A 1999 news article about UNIVAC's famed prediction reported that "Mickelson made the call not to use the odds," but the source for this is not specified.[215]

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reversed formula, swung back again" to the 100-to-one odds, and he gives as midnight the point at which Draper went on air to explain what had happened Wulforst does not provide citations, but he quotes excerpts from the broadcast that suggest he may have had access to partial transcripts provided to Remington Rand in 1952 by a transcription service which, as noted earlier, sometimes indicated not the time that a particular on-air conversation took place but the beginning of the half-hour segment in which it took place. (This is based on comparing a number of these transcripts, as found in Charles Collingswood's papers at the Wisconsin Historical Society, to the actual broadcast.)

[211] For example: Draper, "UNIVAC on Election Night," *Electrical Engineering*, 291-293; Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," HML; Lukoff, *From Dits to Bits*; Vincent, "UNIVAC and Election Predictions," UP-RBML.

[212] See, for example, Woodbury and Mitchell, "How UNIVAC Predicted the Election for CBS-TV," 19-20, HML.

[213] Mickelson, *The Electric Mirror*, 82.

[214] Mickelson, *From Whistle Stop to Sound Bite*, 140.

[215] Leslie Goff, "Univac Predicts Winner of 1952 Election; First For Television and Information Technology," CNN.com, April 30, 1999, http://www.cnn.com/TECH/computing/9904/30/1952.idg/. This

Neither Collingwood nor Cronkite gave any suggestion on air that they had known at the time of that first UNIVAC prediction of a landslide. Their on-air demeanor – including both Collingwood's surprise and then frustration at not getting a prediction until 10:30 p.m. – would seem consistent with not knowing about the early forecast of a landslide. In addition, had they known of that prediction, it is reasonable to think that they might have proposed airing it once evidence of a strong Eisenhower victory began to mount and long before a UNIVAC prediction of a landslide was aired just before midnight. In his script for a radio broadcast the next day, Collingwood places the responsibility for suppressing the first prediction with the "miserable statisticians who were handling him."[216] But no documents have surfaced to date that provide unambiguous evidence, one way or the other, to answer the question of whether CBS played a role in suppressing the initial forecast.

One other question is worth addressing at this point, and that has to do with whether journalists and others taking part in election-night reporting and analysis would have greeted the early landslide prediction as preposterous had they known about it. Or, to ask this another way, were there signs available, to those looking closely at the details of early returns, that an Eisenhower sweep was developing? It is clear that in the CBS newsroom, there was a range of comfort levels with reading an outcome into the early returns. And Collingwood himself wrote in a radio script the day after the election that the desire of journalists not to repeat the errors of 1948, when they underestimated Truman's strength, left them underestimating Eisenhower's. "Reporters can cover

appears to have been a reprint of an article that appeared earlier in *Computerworld* online; Leslie Jaye Goff, "And the winner is…," Computerworld.com, Jan. 25, 1952.

[216] Charles Collingwood, "Report to the West," script, Nov. 5, 1952, Box 5, Folder 12, Charles Collingwood Papers, WHS.

football games, fires, every variety of human experience," Collingwood said, "but put them on an election and you can't get them to believe their eyes and ears."[217] Yet there is also evidence that soon after election returns began coming in to newsrooms in a number of places, reporters and analysts were taking note of a string of surprising developments favoring Eisenhower. On the CBS broadcast, Cronkite found them in South Carolina, Connecticut, Florida, Baltimore, Cleveland, and elsewhere. The *Hartford Courant* had reported even earlier, at 7:40 p.m., that Eisenhower had carried the much-watched state of Connecticut.[218] Douglas Cornell of the Associated Press Washington bureau wrote after the election that "the outcome was obvious almost from the start" and that "by 8 p.m., we were writing that Ike had crashed into the lead and was running strongly."[219] And in the first few minutes of the radio network coverage at NBC, correspondents in the field were filing dispatches of surprising Eisenhower strength in various states by looking at complete returns from particular cities and towns and how they compared to 1948.[220] At the *New York Times,* experienced reporters were working their contacts around the country to get a read on the early voting.[221] One checked with the managing editor of the *Miami Herald* and was told by 8:30 that Eisenhower would take Florida.[222] After word came at 9:05 p.m. that Eisenhower was ahead by 2,000 votes in industrial Rome, N.Y.,

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[217] Ibid.

[218] "The Dispatch That Heralded Ike's Landslide," *Hartford Courant*, Nov. 9, 1952, 18.

[219] Cornell, "Okay, Okay, Election 'Brain' – But Can It Write Leads Too?" *AP World*, LOC.

[220] Election Coverage, parts 1-2, NBC Radio, Nov. 4-5, 1952, No. 320, Disc 45A, Recordings, Script and Recording Library, NBC Records, WHS.

[221] "Sweep Coverage Leaves Nothing for Sweeper," *Times Talk* 6, no. 3 (November 1952), 5-6, NYPL; *Times Talk* was an in-house publication of the *New York Times*.

[222] Ibid., 5.

another veteran *New York Times* reporter remarked to one of the editors, "Looks like it's all over." [223] And in a post-election recap, *Time* magazine would report that by 9 p.m., with less than 5 percent of the vote counted, "almost every indicator was beginning to point Ike's way."[224] In addition, the Republican National Chairman, Arthur Summerfield, was making pronouncements at about 8 p.m. that a "landslide" seemed to be developing.[225] Before 9 p.m., Summerfield had escalated his imagery, with CBS reporting that he had claimed victory and deemed Eisenhower to be "rolling on like a tidal wave."[226] Summerfield was a partisan, to be sure, but his remarks were reported nonetheless by CBS, and his assertion certainly introduced he notion of a landslide early on into the evening's discourse.[227]

Perhaps the most interesting aspect of the UNIVAC camp's reluctance to believe the early forecast, then, is what this might tell us about how they and CBS envisioned the computer's role. It was to be a thing apart. It would be included in the broadcast, to be sure, but its use would not be integrated with the other means by which journalists on election night try to make sense of the returns. There was a camera crew in Philadelphia but no correspondent. As Collingwood had put it, the computer was "sitting there in his corner."[228] The experts in programming, statistics, and engineering had anticipated a great many sources of error and built in a variety of means by which to detect them. But

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[223] Ibid., 5-6.

[224] "Election Night," *Time*, Nov. 10, 1952.

[225] Ibid.

[226] Election Coverage, part 2, CBS Television Network, Nov. 4, 1952, PCM.

[227] Ibid.

[228] Election Coverage, part 2, CBS Television Network, Nov. 4, 1952, PCM

they do not appear to have anticipated the scenario – surprising in light of the fresh memories of 1948 – in which the computer would generate a correct prediction so surprising that it would not be believed. Their implicit methodology on election night, then, was to compare the prediction to expectation rather comparing the prediction to other sorts of fresh data points, easily obtained, by listening to the radio or watching television or brainstorming with experienced reporters and political observers. Draper dismissed as impossible in real time a solution that might have involved checking the calculations.[229] He and his colleagues looked, instead, for errors in their statistical model and their program. No clear evidence has emerged that built into the process was a means by which the UNIVAC team would discuss the predictions with the CBS staff, both groups together assessing both the validity of the computer-generated predictions and the validity of assessments made by other means, with each perhaps reflecting on the implications of the others' findings for their own work.

In the end, the UNIVAC had been added to the election-night formula – to attract and interest viewers and generate headlines – but it was not well integrated into the journalism of election night. At CBS, this even had a physical dimension, with the computer operating in another city. At NBC, where the Monrobot had been used to attract viewers, there would also be a lack of integration on election night. This would be manifested, in part, by not incorporating the Monrobot into the NBC television and radio broadcasts until well into the evening, just after 10 p.m. Still, in one of the details of this election night that would be lost until now from the historical record, the Monrobot would beat its giant competitor to the airwaves with an analysis of returns.

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[229] Draper, "UNIVAC on Election Night," *Electrical Engineering*, 293.

The Monrobot's Election-Night Debut on NBC Radio and Television

NBC started its television coverage of the election an hour later than CBS,

allowing a regular variety show, the *Buick Circus Hour*, to run until 9 p.m. in its usual

time slot, albeit with a special guest star, the highly popular Milton Berle.[230] NBC radio

took to the air with its coverage at 8 p.m. Many of the themes paramount in CBS

election-night broadcasting could also be seen at play on NBC from the outset. Among

these was the highlighting of the night's drama and the positioning of the network at

center stage. In doing so, mention of the Monrobot would have a role in touting the

special nature of the NBC effort, even if the computer itself would not be heard from for

another two hours. As with the UNIVAC at CBS, the Monrobot would be a player in the

NBC broadcast on radio and television – described in wondrous terms at the outset, but

then not quickly or tightly integrated into the evening's agenda for delivering news.[231]

At NBC, the wonder of the election's mass action, the wonder of the radio's

nationwide audience, and the "story of the story" were combined to position the network

at the center the night's events along with the sponsor of its radio and television

broadcasts, Philco. "From all over the nation," said announcer Bob Murphy, "your votes

are coming in – votes from free Americans in a free election." [232] Together NBC and

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[230] "Buick Circus Hour," advertisement, *New York Times*, Nov. 4, 1952, 36.

[231] The account in this chapter of the NBC television broadcast comes from the following source: Presidential Election Coverage, parts 1 through 12, NBC Television News, 9 p.m., Nov. 4, to 3 a.m., Nov. 5, 1952, identification numbers S521104 and S521105, NBC News Archives, New York (hereafter referred to as NBC-NA). Also from NBC News Archives are a set of 16 Program Analysis Cards, numbered 2 through 17, sides A and B on each, from Nov. 4-5, 1952, with a log of the NBC television broadcast. The account of the NBC radio broadcast comes from the following source: Election Coverage, Parts 1-13 and 15, NBC Radio, Nov. 4-5, 1952, Nos. 320-326, Disc 45A, Recordings, Script and Recording Library, NBC Records, WHS.

[232] Presidential Election Coverage, part 1, NBC Radio, Nov. 4, 1952, WHS.

Philco were presenting the results in the "in the public interest," said Murphy. [233] And the audience could hardly have missed the sponsor's self interest, too, as Murphy proceeded to run down a list of Philco products: radios, television sets, radio phonographs, refrigerators, freezers, electric ranges, and air conditioners. These were not just appliances notable for their special or innovative features, but throughout the evening they would be touted as technological wonders, and the radio audience would hear repeatedly about the television set with a unique "golden grid tuner."[234]

The anchor, Merrill "Red" Mueller, was introduced in heroic terms as a distinguished reporter whose career included covering World War II in North Africa, Europe, and Asia, and other key stories since. Mueller, in turn, noted that there were not yet any meaningful trends. He promised that there would be a state-by-state rundown of returns at the beginning of each hour, and he invited the audience to take part in analyzing them: "So get your pencils ready, have your charts at hand, and sit back and enjoy the 1952 election with the greatest NBC radio staff ever assembled for political coverage." [235]

H.V. Kaltenborn was introduced as the "dean of American news analysts." [236] But his initial remarks gave the appearance, at the outset anyway, that he might not have learned his lesson from the drubbing he received in 1948 after letting expectations of a Dewey victory interfere with the ability to see the developing Truman victory. "Everyone agrees that the popular vote will be close and the early returns suggest that

[233] Ibid.

[234] Ibid.

[235] Ibid.

[236] Ibid.

that will be the case," he told his audience now in 1952. "That will make it all the more difficult to determine the electoral vote."[237]

Next, it was time for another member of the NBC radio news staff, George Hicks, to extend the "story of the story" with a description of Studio 8-H. There was the raised table with six microphones for the radio broadcasters. There were four half-room sets for television commentators to report on various contests, with Hicks noting that this was the first time NBC had combined radio and television operations in this way. There was machinery – tabulating and adding machines operated by several dozen people, teletype machines bringing news "from every hamlet in the country." And there was one more device. "Over our shoulder against one wall is the Monrobot," said Hicks. "This is a huge machine. It will add, subtract, give odds, multiply. All you do is feed in the new figure and out on a square card comes the printed result you want."[238] The studio arrangements also included, he acknowledged, means for monitoring other broadcasts to see how NBC was doing in comparison.[239]

Despite Mueller's initial statement about the absence of discernible trends and Kaltenborn's assertion that the race looked close, as NBC switched to correspondents around the country, listeners could hear about vote counts which, when compared to historical patterns, pointed in Eisenhower's direction. Noting that Connecticut was a state which might point the way to a broader trend in the presidential election, Mueller introduced a reporter from affiliate WTIC in Hartford. There, it was said, "General Eisenhower is scoring a smashing victory in Connecticut on the basis of unofficial but

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[237] Ibid.

[238] Ibid.

[239] Ibid.

substantial returns." [240] Upside surprises were reported for Eisenhower in a number of

cities, including Bridgeport – a city Truman had carried by 7,000 votes in 1948 but which

Eisenhower carried this time by three votes. [241] In Boston, the complete vote from several

small towns was dissected to show a similar pattern. In Boxford, for example, a

community north of Boston, the Republican candidate had won handily in 1948, but this

time the margin in Eisenhower's favor was even more overwhelming.[242]

Even this far into the era of network radio, the switches back and forth to

correspondents in cities far from New York were treated as wondrous. Mueller

introduced a report from the West Coast this way: "Now it's time to go really jumping

across the country – out across the wide Missouri, over the continental divide, and

through the Sierras, to California."[243] And when that report was over, Mueller set up the

next one in similar fashion. "And now it's time to keep up with the speed of electronics,

having jumped back from Hollywood to New York 3,000 miles we go halfway back

across the country again," he said excitedly. "For another report from the Midwest, we

switch to St. Louis and station KSD."[244]

The Monrobot would not be brought out during the broadcast's first hour – or its

second – but at about 8:50 p.m., Kaltenborn was given a second turn at the microphone

for his analysis of the returns in the presidential race. He was still cautious, but the

Republican national chairman's comments about a developing landslide gave him an

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[240] Ibid.

[241] Ibid.

[242] Ibid.

[243] Presidential Election Coverage, part 3, NBC Radio, Nov. 4, 1952, WHS.

[244] Ibid.

opening to talk about signs in Eisenhower's favor – a "glimmering" of a landslide, he conceded, but "not yet bright sunshine."[245] Deemed especially interesting was South Carolina, with Eisenhower leading in a traditionally Democratic state where he had been endorsed by the Democratic governor. But Kaltenborn's efforts to parse the vote in particular areas hit a wall when he talked about Eisenhower's steady lead in the national popular vote. While that, if it continued, might mean a landslide, he said, "since we don't know exactly from what states and what areas in each state these votes come, the vote is too small out of the expected total of 55 to 60 million to be definitely indicative."[246]

At 9 p.m., with the NBC radio broadcast already underway for an hour, NBC launched its television coverage from the same headquarters, Studio 8-H in Rockefeller Center.[247] Newscaster John Cameron Swayze, who would be covering the presidential contest throughout the night, opened by explaining a map behind him with oddly-shaped states that were proportioned according to the size of their electoral votes. After a general discussion of the regions of the country and their voting history, he launched right in to returns from what he termed eight "key" states – implicitly important, judging from the content of his remarks, for their predictive potential.[248] In six of these, there were surprises favoring Eisenhower – Connecticut, Florida, Ohio, South Carolina, Virginia, and Maryland, the latter said to have gone with the winner in all but one presidential election since 1888. One of the other states was Illinois, and Stevenson's lead there he

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[245] Presidential Election Coverage, part 4, NBC Radio, Nov. 4, 1952, WHS.

[246] Ibid.

[247] Presidential Election Coverage, part 1, NBC Television, Nov. 4, 1952, NBC-NA.

[248] Ibid.

attributed to the city vote. The eighth state was Tennessee, where Swayze deemed

Stevenson's lead to be no surprise.[249]

With television, the network had the ability to present in a visual way the "story

of the story," and the program's producers made use of this to allow viewers to see the

studio arrangements. During much of the program, the shots would be mostly close-ups,

with fewer of the CBS-style sweeping views of the studio and its infrastructure of

cameras, cables, lights, and support staff. But after Swayze concluded his initial report

from selected states, the NBC television broadcast was more grandly introduced by an

unseen newscaster, Kenneth Banghart, who described what the audience was seeing as a

camera began to slowly pan around the studio. [250] The network had assembled a team

with the "hardest-headed political observers," Banghart said in dramatic fashion. [251] And

while the Monrobot was not immediately mentioned by name, it was among the novelties

that NBC was using to promote its broadcast at the outset. "Our experts will be aided for

the first time by amazing new machines," said Banghart, "scientific brains rallied by

NBC television to bring you the most accurate picture with split-second timing." [252]

The first thing seen by the television audience in Banghart's tour of the studio was

the audience *in* the studio – men in coats and ties and women in evening wear, milling

about in a roped off area to one side of the studio – along with a number of young men

and women in uniforms, presumably NBC ushers or guides. The camera picked up a long

desk on a raised platform with seats where at least 10 individuals – the radio staff –were

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[249] Ibid.

[250] Ibid.

[251] Ibid.

[252] Ibid.

working, already in their second hour of broadcasting. There were others working at a bank of teletype machines, where wire-service dispatches were bringing election news and returns, and there were individuals seated at desks with calculating machines. As the camera continued its sweep, there were camera operators and others operating microphone booms. There were three small sets – each with a desk, a wall display, and prominently displayed PHILCO signs – for the Electoral College vote, the House of Representatives results, and the Senate results, along with a display for reporting on the governor's races. There were banks of the special National Cash Register machines that had been assembled for showing the state-by-state results to the television audience. And then, said Banghart, continuing with his excited tone: "Let's come around to the fabulous electronic indicator – Mike Monrobot, we call it – stuffed with information to compare speedily the figures with those of 1948, to show the trends. Morgan Beatty is there, ready to report those trends. "[253] The audience could see, behind Beatty, the desk-sized computer, with its cover flipped up vertically as a backdrop, showing some of its electronic components. In front of Beatty and facing him across another desk was a young woman tending to the computer's keyboard for input and automatic typewriter for its output, both of which sat on the desktop. The tour was completed as the camera circled back to the studio audience again, and Banghart promised that the returns would be brought to the viewing audience as fast as the "battery of computing machines can work."[254]

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[253] Ibid.

[254] Ibid.

Finally, Banghart came around to Bill Henry, the anchor. Henry was the 1950s version of a multimedia journalist who had penned an election-day column in *The Los Angeles Times* talking about the Monrobot, comparing it to Kaltenborn, and poking some fun at both.[255] Henry began with a report on the weather, including transparent cartoon-like drawings of a smiling sun or an umbrella that said "RAIN" being passed clumsily over various parts of a map of the United States. [256] The rest of the first half-hour of the television broadcast included a state-by-state rundown by Swayze. All the latest surprises were in Eisenhower's favor among states with at least four or five percent of their votes counted: Kentucky, Ohio, Oklahoma, and Rhode Island. At about 9:35 p.m., it was Kaltenborn's turn to join in at the anchor desk for his first television appearance of the night, and he was ready to shed the cautious approach he had taken earlier on radio. Introduced by Henry as a "veteran expert" and an "old friend," Kaltenborn launched right in: "Well, if you want me to make a prediction, I predict that Eisenhower is going to be elected."[257] The overriding reason for his call: "Eisenhower is ahead in every doubtful state from which we have sufficient reports to indicate any kind of a trend." [258] He went on to talk about a few states and the South, where he said Eisenhower's strength was especially important. At the end he came back to the point with which he had started, that "one might be safe in saying that it looks quite definitely like General Eisenhower at this hour." [259]

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[255] Bill Henry, "By The Way With Bill Henry," *Los Angeles Times*, Nov. 4, 1952, Part II, p.1; Henry and the column were discussed in Chapter 5.

[256] Presidential Election Coverage, part 1, NBC Television, Nov. 4, 1952, NBC-NA.

[257] Presidential Election Coverage, part 2, NBC Television, Nov. 4, 1952, NBC-NA.

[258] Ibid.

[259] Ibid.

The Monrobot would get its first turn before the television audience a half hour later, at about 10:05 p.m.[260] Though the small computer would not get quite the "rough ride" that the UNIVAC was said to have gotten from some of the CBS news staff on election night, the enthusiasm of the newsman assigned to it, Beatty, was not the response of others on the broadcast. There seemed to be a look of mirth on Henry's face – as if he were holding back laughter – when he cued the first Monrobot segment. "One of the more interesting features of our election coverage here," said Henry, "is the mechanical brain, the Monrobot, which is being watched now by our man Beatty, who is riding heard on it. And Morgan is ready to explain it, so now to Morgan Beatty.[261]

The camera switched to Beatty with the desk-sized Monrobot behind him. Its operator, Marilyn Mason, was sitting across a desk in front of him. On top of that desk were the Monrobot's controls and printer, connected by unseen wires to the computer. Without missing a beat, Beatty launched right in after Henry's cue:

> And the Monrobot, the electronic brain, has raced far ahead of the election
> returns at this moment, and they have tabulated five million votes and
> combined them with millions of digits that have run through these
> electronic tubes here and have calculated the odds at this point of the
> election returns and they show General Eisenhower is favored to win six
> to five on an isolated basis. [262]

Referring to a recent bulletin that an aide to Stevenson had said the news looked grim, Beatty boasted: "That was confirmed a half hour ago by the electronic brain." [263] But as would be the case with the UNIVAC later in the evening, the audience would have to

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[260] Presidential Election Coverage, part 3, NBC Television, Nov. 4, 1952, NBC-NA.

[261] Ibid.

[262] Ibid.

[263] Ibid.

take the word of someone associated with the computer project – Beatty here, as it would

be Remington Rand's Draper on CBS – that the computer had been a genius behind the

scenes. No records have surfaced to explain why no analysis was reported from the

Monrobot until after 10 p.m. One possibility – given the degree of advanced planning for

the NBC broadcast – is that the Monrobot was simply not scripted to be part of the

television or radio program until the second hour, when there might have been an

expectation before election night that the contest might still be close. Or, given Richard

LaManna's account of the Monrobot's pre-election troubles, with bits of solder falling

into the computer's drum memory, perhaps there was some behind the scenes intrigue

over the computer's operation.[264] Or, perhaps the computer was simply seen more as a

promotional tool than one what might yield valuable insights. We do not know, in part,

because unlike those promoting the UNIVAC, there does not appear to have been much

of a post-election campaign to tell the Monrobot story.

Beatty had not introduced the machine the way Collingwood had, with a

presentation of the election night problem, a discussion of the methodology to be used, or

a description of the computer and its operations. The well-known NBC broadcaster's

presentation was, in all likelihood, baffling to much of the audience. He did not explain,

for those who might not be familiar with statistics or horse racing, what odds meant

generally. He did not explain, either, what it meant to refer to particular odds as being

"on an isolated basis."[265] And at times he presented the odds in such rapid-fire fashion

that it might have been hard for knowledgeable viewers to follow. He did present

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[264] This problem was mentioned by Richard LaManna (telephone interview by the author, Dec. 14-15, 2004) and was discussed in Chapter 5.

[265] Presidential Election Coverage, part 3, NBC Television, Nov. 4, 1952, NBC-NA.

comparative data – such as the odds at the same time of the evening in 1948 that favored

Truman five-to-four – but he did not explain what to make of that in connection with the

six-to-five for Eisenhower. His enthusiasm led him to return several times to the

Monrobot's powers of detection, though even here, his report could be confusing. For

example, he said the odds favoring Stevenson were six-to-four in Illinois, but that the

"brain has raced far ahead of that" by taking the "downstate" vote into consideration and

thus favoring Eisenhower one-and-a-quarter-to-one. [266] What he apparently meant was

what he said next – not that the current odds favored Stevenson, as he said at the outset,

but that they showed Eisenhower ahead in the odds "despite the fact that Governor

Stevenson is far ahead" – apparently in the Illinois returns themselves. [267] At one point,

Beatty asked Mason for fresh information on Connecticut. She pulled a sheet of paper out

of the printer and handed it to Beatty, and he used that information to return to the point

he had made at the outset. Referring to the dark assessment given by a Stevenson aide,

Beatty said that "the suspicions of the governor of Illinois that things look pretty grim

were confirmed well over – well ahead of the governor himself – by the electronic

brain."[268]

Notably, in comparing machine to human, the humans Beatty chose as foils were

Stevenson and his aides – not for being wrong, but for being slow. And in making

machine-vs.-human comparisons, he avoided skewering the pollsters for predicting a

close race or some of his journalistic colleagues for their cautious approach on election

night to making a strong statement about the likely outcome based on early returns. He

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[266] Ibid.

[267] Ibid.

[268] Ibid.

was not positioning the Monrobot as an improvement over either the journalist or the pollster.

The Monrobot segment had lasted two minutes. Next on camera was Swayze to report, as well, on the presidential contest. Swayze made no reference to the Monrobot or to Beatty's report and repeated the same news with which Beatty had begun – about the Stevenson aide describing the situation as grim.[269] Beatty and the Monrobot would not, in fact, come back before the television audience until after midnight. Nor would the computer or its output be discussed before then, with the exception of one quip by Henry, who, when adding up presidential votes in his head, said, "That's just a rough guess – I haven't got that Monrobot at my fingertips here."[270]

Minutes after concluding the first televised Monrobot segment, Beatty did make his way over to the radio desk – apparently accompanied by Marilyn Mason, the Monrobot operator – for a turn with the listening audience.[271] Mueller set up the segment with the human-vs.-machine motif, speaking of the "two brains" that just sat down with the radio staff.[272] "One," said Mueller, "belongs to a very famous Washington correspondent of ours, Mr. Morgan Beatty, and the other one belongs to a mechanical genius that he's operating over here in the corner of the room."[273] Mueller then asked Beatty for "the report from the dual brain."[274]

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[269] Ibid.

[270] Ibid.

[271] Presidential Election Coverage, part 9, NBC Radio, Nov. 4, 1952, WHS.

[272] Ibid.

[273] Ibid.

[274] Ibid.

Beatty picked right up with the same theme. "I've got a lot of respect for this mechanical genius over there," he said, and then in a bit of self-deprecation, added: "Marilyn, I don't think you need my brain anymore at all."[275] Beatty gave the radio audience a report much like the one he had given on television, including a claim that "our mechanical brain was exactly one hour ahead" of the Stevenson aide "in figuring that things looked pretty grim."[276] Beatty came back to the same notion of the machine as faster than the Stevenson camp after talking about the results both in the Chicago vote count and the national returns, saying "this machine was a little smarter than the governor of Illinois."[277] Beatty spoke of the Monrobot as being so fast that it could "figure the odds while the race is being run." [278] And in a quest, perhaps, to find new ways of describing the odds, he came up with one set of curious terms, an apparent reference to a female figure with proportions larger at the bottom than the top:

> … I would like to point out a solid state. One that's got a nice good, round-sized vote, this is a luscious pear-shaped vote we've got here, and it's very indicative of the situation in the East. Eisenhower odds, with nearly half the vote counted in the state of Connecticut, odds in favor of Eisenhower five to three, meaning there are eight chances there and Eisenhower has five out of those eight in his hands already. [279]

And that was it. Beatty turned the microphone back to Mueller, who, in an attempt at humor, offered up an image suggesting that he may have found Beatty's assignment hard to take seriously. "We'll excuse you to get back and fan those tubes," said Mueller.

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[275] Ibid.

[276] Ibid.

[277] Ibid.

[278] Ibid.

[279] Ibid.

"Don't let that blow out over there, boy." [280]

In addition to computer analysis, the various ways of divining the direction and meaning of the vote that had been seen on CBS television were also in play at NBC. In between accounts of Senate, House, and gubernatorial races, the NBC coverage of the presidential contest skipped around among a wide range of voices: reports by NBC staff in the studio, reports by correspondents in other cities, the dispatches of newspapers, the observations of those seen as keen observers of politics or public opinion, the statements of national party figures, and the concessions of state party chairmen. Those who appeared live on NBC radio and television were generally introduced in a deferential matter by Mueller and Henry. And one of the most notable differences among the various commentators who appeared live was their comfort level at various points in the evening in saying something definitive about the outcome based on a largely common set of available facts.

The pollster Elmo Roper had appeared first on the radio broadcast at about 9:35 p.m., when Mueller introduced him as a "real expert."[281] He was introduced on television about an hour later as someone who could "really explain" the situation as more votes came in.[282] In both segments, Roper chose to lay out a scenario by which Eisenhower, who had an increasingly solid lead in the national returns, could win the popular vote but still lose the electoral vote. He made clear that he was not deeming this probable, but possible. And in his television segment, he went on to mention not just the surprising

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[280] Ibid.

[281] Presidential Election Coverage, part 7, NBC Radio, Nov. 4, 1952, WHS.

[282] Presidential Election Coverage, part 4, NBC Television, Nov. 4, 1952, NBC-NA.

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Stevenson weakness in parts of the South, but also developments in Pennsylvania that could break in Stevenson's favor. [283]

Kaltenborn got another chance just after 11 p.m. to offer up his analysis of the presidential vote count before the Monrobot's return to the air, and he used the occasion to remind viewers of the very definite prediction they had already heard from him of an Eisenhower victory, which was made at about 9:35 p.m.[284] He went farther this time, saying that Eisenhower was about to score one of the most convincing Electoral College wins in American history.

Henry wrapped up that segment by commending Kaltenborn for his early call, while making it clear that this was Kaltenborn's, not the network's, assessment: "Well, H.V., I'm glad to have that analysis of the situation from you because this certainly is a very crucial moment now in the night's returns, and I think that we got in first with our – with your, uh, suggestion that Eisenhower was very vitally in the lead."[285] Henry continued, as Cronkite had, to waiver between what was apparent – mounting evidence in favor of Eisenhower – and an apparent need to make clear that the counting was not done and the outcome was not certain. A few minutes after the Kaltenborn segment, and after a report reiterating the concession of New York to Eisenhower by the state Democratic Party chairman, Swayze poked some fun at "political observers" who had been unwilling to make definitive statements about the likely outcome before the election, and Henry joined in, saying it was looking like they had been "fooled."[286] But Henry would go on

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[283] Ibid.

[284] Presidential Election Coverage, part 5, NBC Television, Nov. 4, 1952, NBC-NA.

[285] Ibid.

[286] Ibid.

then, and later, to note that results were definite only for a few states. Just before

midnight, for example, after Swayze reported a Democratic concession in another state,

New Jersey, Henry pointed out that "there's no such thing as a forfeit in politics," with

nothing definite until a state's final vote count.[287] He also painted a scenario by which the

tide could turn in Stevenson's favor with a few key states – including California,

Pennsylvania, and Illinois – even though Eisenhower would win easily if he claimed all

of the states in which he was then leading.

Just before the Monrobot's second appearance, one more sort of election-night

voice of analysis was heard from – James Farley, a Coca-Cola executive and former

national and New York Democratic Party chief who had served as postmaster general

under President Franklin Roosevelt.[288] He said he was sorry to have to admit the

apparent Democratic defeat. "That was evident to me," he said, "from the early

returns."[289] Then it was Beatty's turn with the Monrobot again – at about 12:10 a.m. –

and Henry again had a mirthful look on his face as he gave a cue for the segment: "And

now, let's go across the hall to the 'brain' and to Morgan Beatty."[290] Though there was

little mystery left about who would win, Beatty's enthusiasm had not waned. He was

given nearly six minutes for his segment, and he repeatedly praised the computer's

performance, starting with his opening: "And over here at Monrobot, the electronic brain,

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[287] Presidential Election Coverage, part 6, NBC Television, Nov. 4, 1952, NBC-NA.

[288] Presidential Election Coverage, part 7, NBC Television, Nov. 5, 1952, NBC-NA; Associated Press, "Farley Becomes Export Head of Coca-Cola Firm," *St. Petersburg (Fla.) Evening Independent*, Aug. 10, 1940, 1, 2.

[289] Presidential Election Coverage, part 7, NBC Television, Nov. 5, 1952, NBC-NA.

[290] ibid.

we've been ahead of these trends all evening long."[291] He recited in rapid fire the

changing odds projected by the Monrobot during the evening – six-to-five, nine-to-seven,

five-to-four, and now three-to-one. He compared Truman's odds at midnight in 1948 to

the much more favorable Eisenhower standings at midnight in 1952, even though the gap

in the popular vote was similar. He took a shot at explaining the methodology being used,

Pointing his pencil over his shoulder where some of the Monrobot's electronic

components could be seen, he said, "You know we run the popular vote in through these

electronic tubes in comparison with mathematical formulas based on the last election and

the expected vote, and the result is that trends are established."[292] He added, by way of

explanation, "We're not predicting anything on the mechanical robot." [293] Beatty

discussed some state votes and, in connection with one, suggested that "the electronic

brain here has picked up something that everyone else seems to be missing." [294] It was the

odds favoring an Eisenhower win in Tennessee – which he confirmed by asking Mason to

check them for him – though NBC had been reporting for well over an hour that

Eisenhower had a surprising lead in Tennessee and Roper had remarked on it even

earlier.[295]

Beatty signed off, and Henry, smiling, thanked him "for that very enlightening

information on the situation."[296] Then, without any commentary on the content of

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[291] Ibid.

[292] Ibid.

[293] Ibid.

[294] Ibid.

[295] Presidential Election Coverage, parts 4-7, NBC Television, Nov. 4-5, 1952, NBC-NA.

[296] Presidential Election Coverage, part 7, NBC Television, Nov. 5, 1952, NBC-NA.

Beatty's report, Henry called Roper in again as "the noted expert on these things."[297] And

even this late in the evening, while conceding that an Eisenhower victory was looking

likely, Roper cautioned that "there are still some big question marks." [298] But it was also

soon Kaltenborn's turn again, at about 12:35 a.m. Again, he reminded viewers of his

televised prediction for Eisenhower, the one made at about 9:35 p.m. And again, Henry

remarked on Kaltenborn's call, this time saying that it was "mighty fine" that Kaltenborn

had been "the first one to state the situation."[299]

Within an hour – just after 1 a.m. – Henry was about to cue Beatty at the

Monrobot one more time, but noted first that those who had been predicting a landslide

seemed to have been correct as New York had clearly sided with Eisenhower and the

California Democratic Party chairman had conceded his state, as well.[300]

The Monrobot was up for its third and final appearance about a half hour after

CBS had retired UNIVAC for the night. Beatty might have been forgiven for losing his

enthusiasm by then, but he didn't. And again he brought out the machine-vs.-human

theme – and again claiming not that the Monrobot had been ahead of the journalists and

commentators, but a safer target: the politicians, also part of the election night mix for

voices offering analysis and prognostication. Perhaps as a follow-up to Henry's report of

the California Democrats' concession, Beatty opened with this: "Very interesting that our

electronic brain has stayed ahead of the politicians all night, and we're very proud of

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[297] Ibid.

[298] Ibid.

[299] Presidential Election Coverage, part 8, NBC Television, Nov. 5, 1952, NBC-NA.

[300] Presidential Election Coverage, part 9, NBC Television, Nov. 5, 1952, NBC-NA.

it."[301] Again he cited the history of the night's odds and said that Mason was calculating the latest national odds. He continued to talk about a number of states while he waited – including the ambiguous remark that Eisenhower was favored one-to-one in Pennsylvania, and in Montana, too. He returned to ask Mason whether she had finished calculating the odds, but as she began to answer that she had, Beatty cut her off and said "I think we're getting them now" as someone he addressed as "Rex" handed him a sheet of paper from outside the camera's view.[302] Reading that sheet, Beatty said the odds had now risen from three-to-one up to ten-to-one, and then, laughing and tossing that sheet of paper off to the side, he added, "you'd just as well make it 100 to 1."[303] If the Monrobot was having troubles on election night from the bits of solder that had damaged part of the memory several days earlier when the computer had been moved to Rockefeller Center, Beatty betrayed no hint of it – though he may have left the audience wondering why the final round of odds he cited had come to him not from Mason but from someone off camera.[304]

Once more, Henry was in command back at the anchor desk, and this time he did make a comment about the computer, but not a complimentary one. "One of the things that I don't think that that brain can tell is what accounts for some of these things that have happened."[305] And here Henry seemed to have been holding himself up as one of those who could deliver the kind of sense-making that the computer could not. Perhaps in

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[301] Ibid.

[302] Ibid.

[303] Ibid.

[304] The mechanical difficulties were mentioned by Richard LaManna (telephone interview by the author, Dec. 14-15, 2004) and were discussed in Chapter 5.

[305] Presidential Election Coverage, part 9, NBC Television, Nov. 5, 1952, NBC-NA.

response to Beatty's report that Eisenhower was favored to win in Arizona, Henry talked about how remarkable it was to see that state go Republican, but that the recently-elected Republican governor there was a "ball of fire" – and former "radio man" and "alumnus of this particular business" – who had been successful in running the state.[306]

 A short while later, there was one more important election-night voice to weigh in: the *New York Times*. Henry told his audience a few minutes after 1 a.m. that the *Times* would be announcing Eisenhower's election in the next edition. "They are ready," said Henry. "They're not going to wait for anybody to concede."[307] His remarks suggest that in 1952, no matter what reporters and pundits and even computers might say, the fact that a newspaper was going to call a race over before the candidate had conceded was still news for an election-night broadcast audience.

As NBC was wrapping up its television broadcast for the might, Beatty got one more turn before the cameras, but this time joining Henry at the anchor's desk. Like a dog on a bone, Henry was himself not ready to concede the relevance of the Monrobot to the broadcast. One could hear it in his tones and his words, including, again, an image giving primacy to humans unaided by electronic brains. But Beatty, too, was not giving up his boosterism. Henry opened the segment this way, as Beatty chuckled at his words:

> We've had quite a time this evening, and one of the interesting features of
> what we've been doing tonight has been the work of Morgan Beatty with
> the Monrobot, the wonderful electronic thinker, and we want to prove to
> you that it is possible for Mr. Beatty to speak, think, and act without
> having an electronic tube in one ear. And Morgan, tell us what you think
> of this election.[308]

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[306] Ibid.

[307] Presidential Election Coverage, part 8, NBC Television, Nov. 5, 1952, NBC-NA.

[308] Presidential Election Coverage, part 12, NBC Television, Nov. 5, 1952, NBC-NA.

And again, without missing a beat, Beatty, delayed his own analysis to heap praise on the computer: "Well, I think Mike Monrobot, our new star, performed beautifully."[309] And then he went on to reference a methodology that seems highly unlikely to have been used, but this, perhaps, gave Beatty an opening to make a point about an electorate in which women had reached numbers in equity with men:

> Seems to me the most important thing about Mike was that he was right because for once, he gets the women. Now I think we've got a very important element there. It's quite obvious that a high proportion of these voters were going to be women this time and they weren't voting according to past party loyalties because they didn't need to have any. And if you assume that 50 or more percent were women, you assume that they didn't like the idea about withholding and inflation, all at the same time, and also assume the Korean – interest they had in the Korean issue – and when we put that factor into Mike Monrobot over there, he gets the women." [310]

And one more time, he referenced something he had said four and a half hours earlier when he had gotten his first turn on camera with the computer. It was that 45 minutes before word had come from Stevenson's camp that things looked grim for the Democratic candidate, the computer had come to the same conclusion. What Beatty did not say at this early morning hour was that this feat of prognostication was not aired right away, and was only announced at a point in the broadcast when both the stream of returns and one of Stevenson's own aides were hinting strongly at his defeat.

At 3 a.m., the NBC national television broadcast from New York ended as it had begun, with the story of the story. The camera pulled back and panned the room once more – now, as Henry put it, "this rather deserted scene before you, just a few people

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[309] Ibid.

[310] Ibid.

422

left."[311] Henry noted by name some of the correspondents and news managers who had taken part in the network's coverage of the campaign and elections, and thanked the companies that had brought their expertise and equipment to bear on election night, including the Monroe Calculating Machine Company, National Cash Register, and the Victor Adding Machine Company. "The excitement is now over," he said. "But those of us who have had a part in it are not going to forget it for a long time." [312]

Wrapping it up at CBS: Mysteries and Messages of the Voters

CBS also wrapped up its broadcast after nearly seven hours with no reference to the UNIVAC but with brief remarks from Lowell Thomas, Edward Murrow and Eric Sevareid – a summing up, as Cronkite called it.[313] What had happened in the election, an Eisenhower landslide, was known and agreed upon by all the various sources of analysis – journalists, commentators, pollsters, political party officials, wire services, newspaper editors, computer, and, finally, Stevenson's concession and Eisenhower's acceptance of victory. The remarks that ended the evening for CBS were almost epistemological in nature – taking on, in part, the question of what led to that outcome and what could and could not be known about those causes. And there were digs at those who would deign to be able to know what the voters had been thinking and predict what they might do. The resistance here was not to technology – UNIVAC was not mentioned – but to the notion that people could be reduced to simple ciphers and that by whatever means, their

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[311] Ibid.

[312] Ibid.

[313] Election Coverage, part 8, CBS Television Network, Nov. 5, 1952, PCM.

intentions and motives could be known to a certainty. And yet, these journalists, among the best known and most respected broadcasters of the day, might be said to want it both ways, trying as best they could to offer their understanding of what it was the voters had done and what the vote meant.

Thomas kicked it off with a dig at the pollsters: "One interesting sidelight on all this victory of General Eisenhower is the way the eminent gentlemen who conducted the polls were fooled. Don't you think so? I wonder if they were just too scared this time."[314] He went on to tell some anecdotes about meeting or encountering Eisenhower – in France during World War II, in a New York restaurant, and even in Thomas's own home – the point of these stories to communicate the personal traits that transcended Eisenhower's initial lack of political know-how and accounted in a large measure for his eventual success: "Don't you believe that that personal warmth played a great part in winning this tremendous political victory? I do."[315] The victor had exuded, as well, "simplicity" and "forthrightness."[316] And Thomas made no pretense to objectivity in ending his segment with this description of Eisenhower: "the man we need, the man the world needs, at this time."[317]

Murrow was up next. Speaking in measured and serious tones, looking alternately at his notes and the camera, he was still striving for eloquence at the end of a long and hectic night: "Walter, it seems to me that this was the end of an era in American politics, a great exclamation point in our national history – because tonight, after 20 long years,

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[314] Election Coverage, part 8, CBS Television Network, Nov. 5, 1952, PCM.

[315] Ibid.

[316] Ibid.

[317] Ibid.

the traditional concessions of defeat came not from Republicans, but from Democrats."[318]

And then he raised the epistemological question – what could be known in advance, or even after the fact – about the voters:

> To me the most impressive thing about tonight is again the demonstration that the people of this country are sovereign, that they are unpredictable, and that somehow in a fashion that is as mysterious to pollsters as it is to reporters, the great normal majority in this country made up its mind as to the man it wanted to lead it. And I believe as of now, no man can say what produced this result or indeed what consequences may flow from it.[319]

That said, Murrow was willing to offer his own speculation, which echoed, in some ways, the understanding offered by Lowell Thomas that Eisenhower had an appeal transcending narrow political categories. "The figures indicate," said Murrow, "that Eisenhower did not win with the indispensible aid of Senator Taft or the farmers or labor or the South. He broke the whole traditional voting patterns of this country. He owes his victory to no man, and to no segment of our society.[320] Murrow talked for almost four minutes, and he concluded, as he had begun, with a dramatic flourish. The new president, he said, "will face decisions upon which the whole history of the free world may pivot," and the "magnitude and completeness of his victory" would only increase the "awesome responsibility" he would assume. [321] Murrow then leaned back, as if drained, and in a fluid motion brought an unlit cigarette to his lips, then reached into his pocket for a match, and lit up.

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[318] Ibid.

[319] Ibid.

[320] Ibid.

[321] Ibid.

Cronkite made a few brief remarks about the challenge Republicans would face in

playing "offense" after having played defense for so long, and then it was Sevareid's

turn. [322] After Murrow's "eloquent words," Sevareid said at first, "there isn't a great deal

that I really feel much like saying." [323] He then went on to offer a cogent analysis of the

political challenges Eisenhower would face. But throughout, he, too, remarked on the

transcendence of the voters:

> I think that it's been rare in American history that one individual has had
> such overwhelming endorsement, a vote of confidence from the American
> people, obviously of all classes, of all sections, of all creeds. I think this
> places upon him personally a magnified degree of responsibility in the
> presidency such as few presidents have exercised. [324]

And again, the mystery of deciphering the voter was on the table. "I think that one of the

things the vote shows," said Sevareid, "is that the independent voters, so called, have

been very much misinterpreted, misunderstood." [325] How was one to make sense of this

group who were thought to have been important to the election's outcome? He thought

Senator Taft had it right: These were not people who normally participated in the

political process and organization was more important than argument in getting them to

the polls. And, said Sevareid, "a great name, a great figure, will bring them out more than

any kind of persuasion." [326]

The epistemological question and the methodological questions had been lurking

beneath the surface all night. What could be known? And how could it be known? The

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[322] Ibid.

[323] Ibid.

[324] Ibid.

[325] Ibid.

[326] Ibid.

broadcasts featuring computers for the first time would not resolve these questions. But the computers had clearly appeared in a landscape in which such considerations were important to the journalistic imperatives for timeliness, accuracy, and an intense need to make use of what use of what was visible and what was not so easily visible in making sense of the world.

The Demise of Times Square as a Venue for Election-Night News

There were other imperatives on election night, including the quest by news organizations to position themselves at the center of attention. In New York, Times Square had survived as an election-night gathering place well into the era of commercial radio broadcasting, and it had seen crowds that numbered in the hundreds of thousands as late as the wartime presidential election in 1944.[327] But after the war, Meyer Berger, chronicler of city life for the *New York Times*, began writing post-election stories taking note of both the diminishing crowds and speculation that radio and television were to blame.[328] Still, in 1952, the *Times* had not giving up on drawing a crowd to Times Square. Elaborate new displays to track the returns had been commissioned to

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[327] Meyer Berger, "Roosevelt Crowd in Times Square Quiet, Very Young, Middle-Aged," *New York Times*, Nov. 8, 1944, 7.

[328] Post-election stories by Meyer Berger from 1946 to 1951 in the *New York Times*: "Crowds Apathetic in Times Sq. Area," Nov. 6, 1946, 5; "No Crowds Flock to Times Square," Nov. 5, 1947, 3; "Election Night Crowd in Times Sq. is Thin, Silent and Without Spirit," Nov. 3, 1948, 16; "Times Sq. Crowds Muster Thin Line," Nov. 9, 1949, 3; "Dwindling Crowd Threads Times Sq.," Nov. 8, 1950, 6. In 1951, there was just a three-paragraph item with no byline: "Times Square Police Find Election Night 'Dullest Yet,'" *New York Times*, Nov. 7, 1951, 21.

accompany the traditional searchlight and the "zipper" of news spelled out in a band of

lights that ringed the building, itself an election-night innovation from 1928.[329]

The displays in Times Square were orchestrated from the newsroom, where

decisions were also made in advance of election night about the timing of press runs.

Management at the *Times* had opted not to rush early editions to print until there was

definitive news. The managing editor, Turner Catledge, concluded that with television

and radio providing reports through the night, "we can afford to hold back until we have

a fairly complete picture."[330] The first *Times* editions hit the presses at 10:52, an hour

later than usual, with a headline that Eisenhower was in a strong lead.[331] Then, at 12:40

a.m., the *Times* was ready to declare the race over in multimedia fashion and with precise

timing.[332] A bulletin was to be read over the *Times*'s radio station, WQXR, which had set

up shop at a broadcast desk in the *Times* newsroom. Orders were given for a search light

atop the Times Tower to signal Eisenhower's victory by a prearranged code that had been

shared with readers, a beacon shining steadily to the north. Orders were also given for the

"zipper" to carry the news around the building and for a stories-high, thermometer-like

display on the side of the tower to shoot to the top on the side tracking Eisenhower's

electoral vote tally and flash word of his win. The top management at the *Times* –

Publisher Arthur Hays Sulzberger and Maj. General Julius Ochs Adler, vice president and

general manager – were eager to see for themselves both the Times Square displays and

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[329] "Times' New Election Indicator Will Give Returns at a Glance," *New York Times*, Nov. 3, 1952, 16; "How Times Will Flash Election Results By Lights From Tower in Times Square," *New York Times*, Nov. 2, 1952, 76.

[330] "Sweep Coverage Leaves Nothing for Sweeper," *Times Talk* 6, no. 3 (November 1952), 1.

[331] Ibid., 5.

[332] Ibid., 6.

the crowd's reaction. The executives and some of their aides walked into Times Square

just before 12:40 a.m., and the scene was captured in *Times Talk*, an in-house publication

of the *New York Times*:

> Mr. Sulzberger found himself standing beside an excited watcher –
> a stranger – whose eyes were glued to the board and to the running golden
> letters above it. The publisher quietly told the man, "I'll bet that
> Eisenhower thermometer will shoot right to the top at 12:40." The man
> snorted without taking his stare from the board.
>   12:40 – and all the signs, and the turret beacon broke out in sudden
> concord. The little man's head slowly looked in wide-eyed disbelief at the
> quiet prophet beside him. Mr. Sulzberger smiled and turned back to the
> office.[333]

But what the *Times Talk* piece did not capture was the thin crowd itself. This can

be seen in newsreel outtakes – a crowd so thin that there was enough room in the square

for vehicles to pass through easily.[334] The scene was also captured by Meyer Berger, who

authored his final obituary for Times Square as a gathering spot for crowds seeking

election-night news.[335] No more than 10,000 were in the square between 9 and 10 p.m.,

and fewer than 25,000 were estimated to have been there at any time, including theater-

goers. Police suggested that television and radio were the only plausible explanations. "A

tradition was dead," Berger concluded, "with only a few thousand pallbearers to see it

peacefully interred." In an editorial, the *New York Herald Tribune* concurred, and pinned

the blame on television.[336]

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[333] Ibid., 6.

[334] "Eisenhower Landslide," outtakes, Nov. 4-5, 1952, no. 411, Universal International Newsreel, Record Group 200 UN, Motion Picture, Sound and Video Division, National Archives, College Park, Md.

[335] Meyer Berger, "Old Times Square Tradition Dies; Usual Election Night Uproar Gone," *New York Times*, Nov. 5, 1952, 24.

[336] "The Times Square Trend," editorial, *New York Herald Tribune*, Nov. 6, 1952, 22.

The venues for election night news were shifting, and the technologies that would be employed both to generate and transmit that news were changing. But there had been a constant, too, though it had not worked out in Times Square. That constant was the deployment of innovations to use in attracting an election-night crowd, whether the sort of physical crowd that gathered at places such as Times Square or the virtual crowd of millions watching and listening at home.

Computers on Election Night: An Uncertain Future

When the counting was done, Eisenhower had, indeed, won by a wide margin. Stevenson carried only nine states, all in the southern part of the nation. And even there, Eisenhower had eroded the traditional Democratic base. He took Florida, Kentucky, Virginia, Texas, and Oklahoma. Eisenhower won Missouri, too – the home state of the sitting president, and the state that *Collier's* magazine had declared the best one to watch on election night, having sided with the victor in every election after 1900. Stevenson could not even carry his own state, losing nearly as badly there as he did nationwide.[337] Eisenhower's national margin of victory was more than 10 percentage points. More than 61 million votes had been cast – exceeding expectations – and Eisenhower had claimed about 34 million of them.[338] In the Electoral College, Eisenhower's victory was a blowout: 442 to 89.

Eisenhower ran ahead of his own party. Massachusetts was a case in point. He carried the state even though his national campaign chairman, Henry Cabot Lodge Jr.,

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[337] Richard M. Scammon, compiler and editor, *America Votes: A Handbook of Contemporary American Election Statistics* (New York: Macmillan and the Governmental Affairs Institute, 1956), 82-83, 421.

[338] Scammon, *America Votes,* 421.

lost a bid there for reelection to the Senate, knocked out of office by a young Democratic

Congressman, John F. Kennedy. Still, it had been a remarkable night for the

Republicans. They had recaptured the White House after losing it a generation earlier to

Franklin Delano Roosevelt. They picked up enough seats in the House and Senate to

become the new majority party in each chamber. They also won five new governorships,

extending the lead they had established two years earlier.[339]

While the night's big news was a power shift in politics, only with the benefit of

hindsight can we now see that the broadcasts carrying this news to Americans had also

served as another sort of sentinel event. They showcased two technologies – television

and computers – that would arguably come to define public and private life far more over

the subsequent decades than the outcome of the day's political contests. Television had

extended its reach from coast to coast for the first time in the live coverage of a

presidential election, and it would go on within a few years to reach nearly all homes and

become the dominant American news medium. And millions of Americans had gotten

their first glimpse of computers in action. These new machines had played a role –

however imperfect – in the kind of prognostication previously delegated exclusively to

humans, foreshadowing the devices' increasing integration into the most fundamental

aspects of daily life.

But in real time, the historic nature of that night's deployment of "electronic

brains" – both in the general context of American life and the specific context of election-

night reporting – was not clear to those at the center of events. In fact, for at least some

of the key players, what prevailed when they reflected on this innovative use of

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[339] *Congress and the Nation, 1945-1964, Vol. 1-A: A Review of Government and Politics in the Postwar Years* (Washington: Congressional Quarterly Service, 1965).

computers was a sense of unease. After his nationally televised mea culpa, Remington

Rand's Arthur Draper would go on to describe this as one of the worst nights of his

life.[340] NBC News executive Charles "Joe" Colledge, whose duties had included

arranging for the Monrobot to have a place in the Studio 8-H broadcast, did not feel

triumphant at the end of the night, either. Reuven Frank, then a young NBC staffer who

would rise to become head of the network's television news operation, recalled Colledge

saying he left the studio that night wondering whether his career was in jeopardy after

facing withering criticism of the program from the NBC "brass."[341]

Despite later accounts portraying election night 1952 as a landmark in an

unstoppable trajectory of computers, the place of computing in election-night

broadcasting – let alone in journalism – seemed unclear. It remained to be seen, as

Business Week had written before the election, whether computers would be acclaimed as

appropriate tools for the "Election Night hurlyburly."[342]

[340] "The Machine Vote," *Newsweek,* Nov. 17, 1952, 63ff.

[341] Reuven Frank, "The Great Coronation War," *American Heritage*, 44, 8 (December 1993); Frank also spoke of this in a telephone interview by the author on Oct. 29, 2005.

[342] "Election Night: Test for Polls and Robot Brains," *Business Week*, Nov. 1, 1952, 30.

Chapter 8: Aftermath of the 1952 Broadcasts

The story of election night 1952 has, over time, become one in which the

computer – and in almost all accounts this is Remington Rand's UNIVAC alone – scores

a publicity coup by getting the outcome right, being smarter than its human keepers, and

being seen in action by an audience of millions.[1] That story has some problematic

features that do more than miss the variety in the election-night experience. For one

thing, if Americans were more acquainted with "electronic brains" by the morning after

the election than they were before election day, the CBS broadcasts featuring UNIVAC

were just part of that exposure. NBC television, which featured the Monrobot, scored

higher election-night ratings than CBS, according to a report from the Trendex rating

service that NBC was happy to share with the press.[2] The Monrobot was also featured on

radio, which was still the dominant broadcast medium. And the Monrobot was presented

to NBC viewers during at least three daytime programs on election day, as well as being

mentioned in other publicity in print and on air. The standard UNIVAC-CBS story also

misses the wide range of responses to the journalistic use of "electronic brains." This, in

turn, contributes to the impression that a single event alone, the computer's election-night

debut, changed the course of computing history, popularizing the computer and fixing a

place for it election-night broadcasting. The record suggests a more complicated story

and calls for a more nuanced understanding the process of change. And the available

evidence suggests that what kept the UNIVAC story going was not so much what

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[1] There are many iterations and related versions of this narrative; one of the most commonly cited is Wulforst, *Breakthrough to the Computer Age*, 161-171.

[2] "NBC-TV's Election Night Coverage Had More Viewers Than Any Other Network, Trendex Reports in 10-City Survey," Dec. 7, 1952, NBC Trade Releases, LAB; "Tele Topics," *Radio Daily – Television Daily*, Nov. 10, 1952, 7.

happened on election night, but a combination of after-the-fact efforts to keep the story alive and the inherent appeal of a certain version of election-night events that supported a strong wow factor – machine outsmarts human. This episode did open a door to a consideration of computers as tools with a place in journalism. And it engendered a widening circle of interested parties. The 1954 elections saw what may be the first use of a stored-program, electronic computer to help call an election for a newspaper – the *Detroit Times*, using a computer at nearby Wayne University. And the 1956 elections saw an aggressive push by IBM to secure a place on the election-night stage as the company fought its way to leadership in the developing commercial computer industry. But the events of election night in 1952 did not close the door to naysayers – or to active resistance among journalists. The process of coming to terms with computers for even a limited use in journalism – election-night analysis – would by no means be an automatic response to the events of 1952. The framing of computer use as human vs. machine would continue to have appeal both in the circumstances in which they were employed for election use and in the critiques of that use.   And even as the 21st century arrived, the election-night marriage between journalism and computing continued to have shaky episodes.

Responses among the Collaborators

With the long view of a half century, we can see election night 1952 as a seminal and sentinel event that featured bold experiments and a willingness to take risks before a live audience of millions. Here was an attempt to quantify in a new and more precise way the real-time analysis that journalists had been practicing on election nights for decades.

434

And here were computers emerging from behind closed doors of academia and the military and the government – where they worked on such tasks as the preparation of census tables, the calculation of missile trajectories, and the solution of problems in thermodynamics – to do something that ordinary people cared very much about. One could date the dawn of the computer age to this event as well as any to other. But for at least some of those in the middle, the use of computers on election night did not have a triumphant aftertaste.

For public consumption, NBC issued a post-election press release that included a glowing account of the Monrobot's performance. In the studio audience, NBC boasted, "Notables in the arts, science and industry watched the Monrobot, widely heralded 'electronic brain,' predict General Eisenhower's election on the basis of incomplete returns three hours before Stevenson conceded defeat."[3] And NBC boasted, too, of drawing more election-night viewers than the competition on election night in the 10 cities surveyed by the Trendex ratings service.[4] But Joe Colledge's conclusion that the network brass were not happy with the broadcast was echoed a few days later in a behind-the-scenes memo between network executives Davidson Taylor and Joseph McConnell. Though pleased by the ratings, Davidson wrote, "I agree that our coverage did not live up to our own expectations."[5] As for the Monrobot and its assigned NBC correspondent Morgan Beatty, Davidson wrote, "Beatty was commanding and informed

[3] "NBC Brings the Nation Complete, Accurate Results of Elections With Staff of 300 for Record Coverage On Radio and Television," press release, NBC, Nov. 5, 1952, NBC Trade Releases, LAB.

[4] "NBC-TV's Election Night Coverage Had More Viewers than Any Other Network, Trendex Reports in 10-City Survey," press release, NBC, Nov. 7, 1952, NBC Trade Releases, LAB.

[5] Davidson Taylor, memo to Joseph McConnell, Nov. 13, 1952, Box 29, Folder 121, Sylvester L. Weaver Jr. Papers, NBC Records, WHS.

as usual, but I think maybe we could have used him to better advantage away from the baleful influence of our mechanical brain, the monrobot."[6] Taylor, whose own tasks on election night included keeping an eye on the competition, was not impressed, either, with the computer experience at CBS. "We weren't the only ones who had troubles," he wrote. "The CBS Univac was a real embarrassment. They kept asking the machine questions and it wouldn't give any answers."[7]

In the wake of the 1952 experience, the trajectory of computers as potential tools for election-night journalism was not one of automatic adoption at NBC. For the mid-term elections in 1954, in fact, NBC would retreat from computer use altogether. In a 1954 press release that was said to recount a memorandum to the staff, news director William R. McAndrew described an election-night plan that would focus heavily on correspondents reporting in from around the country. "A good local reporter," he explained, "is better than the best out-of-town statistician or mechanical device." [8] In the wake of that election, NBC issued a press release making the same assertion and extending the journalist-vs.-machine comparison: "Prognostication and trend-following was left to Joseph F. McCaffrey, a veteran Capitol Hill observer who was informally billed as 'NBC's improvement on election computers.'"[9]

The Monroe Calculating Machine Company, meanwhile, would celebrate its 1952 election-night appearance on the national stage with a two-page spread in *Keynote*, a

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[6] Ibid.

[7] Ibid.

[8] "'Who's Winning?' Is Vital Question to Set Pace for NBC Radio and Television Election Coverage," press release, NBC, Oct. 27, 1954, NBC Trade Releases, LAB.

[9] Ibid.

magazine for its employees, describing the NBC broadcast as "the most widespread publicity Monroe has ever had."[10] And the election-night role, along with photographs, would be included in a brochure the company put together in 1953 to solicit contracts from the military and other customers for electronics and other engineering products.[11] But there is not much evidence of concerted efforts by the company to keep the story of the Monrobot's election-night debut alive.[12] No Monrobot would again be part of an election-night broadcast on network television. The line of computers did go through several iterations over the next decade and a half. A Monrobot III – this was the model used on election night – went to an Air Force research facility in Massachusetts in 1953.[13] A subsequent model, Monrobot V, was like the Monrobot III but was built to be carted around over rough terrain – vacuum tubes and all – to aid the Army in mapping.[14] The company became part of Litton Industries in the late 1950s and its products continued to

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[10] "Monrobot Flashes Election Trends," *Keynote*, November 1952, 10-11, MSB.

[11] "Monroe Calculating Machine Company: Presenting Information on Facilities for Military Production for the Consideration of Armed Forces Procurement Authorities," brochure, Monroe Calculating Machine Company, June-July 1953, Records of the Monroe Calculating Machine Company, MSB; and "Monroe Calculating Machine Company: A Presentation of Its Facilities for Precision Production," brochure, Monroe Calculating Machine Company, December 1953, Records of the Monroe Calculating Machine Company, MSB.

[12] An examination of the remaining records of the Monroe Calculating Machine Company, including scrapbooks of press clippings, in-house magazines, and other public relations efforts, revealed few references after 1952 to the election-night events of that year; these records are maintained at Monroe Systems for Business, Levittown, Pa.

[13] "Monrobot Electronic Calculator Model III – Manual of Operating Instructions, Prepared for Air Force Cambridge Research Center, Cambridge, Mass.," instruction manual, Monrobot Corporation [subsidiary of Monroe Calculating Machine Company], 1953, William Burkhart Papers, courtesy of Dorothy Burkhart; this Monrobot III installation is also listed in *A Survey of Automatic Digital Computers*, Office of Naval Research Washington, D.C., 1953, 67, Box 252, Computer Documents, NMAH.

[14] "Monrobot V Goes to Uncle Sam," *Keynote*, April 1953, 5-7, Monroe Calculating Machine Company Records, MSB; Clarence W. Kitchens, "Monrobot V Electronic Survey Computer" paper presented at the joint meeting of the American Society of Photogrammetry and the American Congress of Surveying and Mapping, Washington, D.C., March 10, 1955, reprint, copy courtesy of Vincent Pogorzelski. The same document is archived in Box 81, Computer Documents, NMAH.

include computers. [15] One of these models was the Monrobot Mark XI, which captured

the attention of the *New Yorker* in a 1960 "Talk of the Town" piece that began this way:

"More news from the spooky world of automation!"[16] As with the features touted by

NBC on election night 1952, the *New Yorker* noted the latest Monrobot's surprising size

– at just 375 pounds it was deemed in 1960 to be "completely portable" – and its equally

diminutive price, for the times – $24,500.[17] The Monrobot line of computers faded out in

the 1960s.[18] And Monroe itself – after being bought and sold several times, adding and

removing other product lines, and changing names to Monroe Systems for Business – is

focused today, as it was when the company was originally founded in 1912, on the sale of

calculators.[19]

　　As for the 1952 election-night experience at CBS, the network did not pull away

from computing and would use a UNIVAC computer again for the 1954 mid-term

elections and the next presidential election in 1956 – which would also draw the attention

of the *New Yorker*.[20] Unlike the Monrobot, the UNIVAC would have a long and storied

history – including continuing attention to its election-night role in 1952 – and Unisys,

the eventual successor company to Remington Rand, is still in the business of providing

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[15] "Continued Growth," Monroe Systems for Business, http://www.monroe-systems.com/SWAPPID/74/SubPageID/23453; and Jeffrey L. Rodengen, *The Legend of Litton Industries* (Ft. Lauderdale, Fla.: Write Stuff Enterprises, 1999), 34, 37, 44.

[16] F.S. Norman, Brendan Gill and Thomas Meehan, "Talk of the Town: Portable Robot," *New Yorker*, March 19, 1960, http://www.newyorker.com/archive/1960/03/19/1960_03_19_034_TNY_CARDS_000266873.

[17] Ibid.

[18] "Monrobot History," fact sheet, Records of the Monroe Calculating Machine Company, MSB.

[19] "Rapid Change over the next 40 years," Monroe Systems for Business, http://www.monroe-systems.com/SWAPPID/74/SubPageID/23454.

[20] The *New Yorker* article from November 1956 is reprinted as the Chapter 13, "Brain," in Philip Hamburger, *Matters of State: A Political Excursion* (Washington: Counterpoint, 2000), 93-96.

computer-related products and services to customers worldwide.[21] But the immediate

reaction in 1952 also appears to have been well short of ecstatic at CBS. In a four-page

post-election press release that went on at length with details and superlatives about the

network's television broadcast, a single line was reserved for the computer use: "Univac,

the electronic 'brain,' as early as 10:30 p.m. predicted the sweeping victory of the

Republican standard bearer."[22] And at Remington Rand's Eckert-Mauchly Division,

UNIVAC engineer Herman Lukoff would write later that some officials were "kicking

themselves" after the election for not having aired the first prediction.[23] But Sig

Mickelson, the CBS news and public affairs director, was more upbeat about the

UNIVAC election-night role in a letter to one leader of the Eckert-Mauchly effort 10

days after the election:

> I have held off writing to you to thank you for your enormously important
> Univac contribution while awaiting reaction from the country. I can assure
> you now that the reaction is almost without exception very favorable.
> While Univac had its troubles at one point, the public was very tolerant of
> the error and quite appreciative of the quick correction.

After consulting with a member of the CBS research staff and a publicist for Remington

Rand, Mickelson wrote, "I think it is our unanimous feeling that we were completely

right in using it and that Univac can be enormously important in anticipating election

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[21] A number of works provide the history of UNIVAC, Remington Rand, and its successor corporations, Sperry Rand and Unisys, and some of these are listed in the bibliography. Extensive records related to UNIVAC development and history are located in archives including the Hagley Museum and Library, Wilmington, Del. A chronology of Unisys history is available on the company's Web site at http://www.unisys.com/unisys/about/company/history.jsp?id=209&pid=201, which includes this item from 1952: "UNIVAC makes history by predicting the election of Dwight D. Eisenhower as U.S. president before polls close."

[22] "CBS-TV Sets Pace in Covering Eisenhower Victory," press release, CBS, Nov. 5, 1952, CBS-AS.

[23] Lukoff, *From Dits to Bits*, 131.

trends in the future."[24] And at least some at CBS felt upbeat enough about the UNIVAC

performance to seek a Peabody Award for 1952 with a tightly edited 30-minute version

of the election-night broadcast featuring the computer – but not all of its problems – and

playing up the human analysis, as well.[25]

The night after the election, Charles Collingwood crafted a self-deprecating script

for a weekly radio broadcast in which he poked fun at himself and other journalists for

missing the signs of an Eisenhower victory out of the fear of repeating the mistakes of

1948.[26] His remarks about the UNIVAC prefigured in some ways the mixed responses to

computer use that would come from observers who were not involved in the broadcast.

He called attention to the UNIVAC's difficulties. He reported that machine's early

prediction was off by just four electoral votes but had not been believed by its keepers,

who then tinkered with the data and made the computer "look silly."[27] He referred to the

UNIVAC as "my machine" and "him" and said that he had believed in it and was proven

right. His conclusion: "It just goes to show that the trouble with machines is people."[28] At

the same time, Collingwood scored the election's unexpected outcome as "victory for the

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[24] Sig Mickelson to Phil Vincent, Nov. 14, 1952; Box 3:B:1, Folder 7, John W. Mauchly Papers, UP-RBML. Vincent is identified in the letter as the "Plants' Manager" at the Eckert-Mauchly Division of Remington Rand in Philadelphia.

[25] "Election 1952," excerpts of television broadcast, CBS Television Network, Nov. 4-5, 1952, Walter J. Brown Media Archives and Peabody Awards Collection, University of Georgia, Athens, Ga.

[26] Charles Collingwood, "Report to the West," script, Nov. 5, 1952, Box 5, Folder 12, Charles Collingwood Papers, WHS.

[27] Ibid.

[28] Ibid. Part of this line – "The trouble with machines is people" – would be attributed to Edward R. Murrow in a post-election magazine article; "The Machine Vote," *Newsweek*, Nov. 17, 1952, 64.

ordinary man" over the "soulless political scientists" who would "treat him like a cipher."[29]

Observers Respond: Journalists, Talk-Show Hosts, and Comedians

Beyond the ranks of those involved in the election-night broadcasts featuring computers, a range of others weighed in with reports, observations, and opinions – journalists, columnists, talk-show hosts, on-air celebrities, and comedians. These responses covered a continuum from praise to dismissal. In addition, one of the most common elements was humor – whether it was laughing with or laughing at those involved. In fact, the UNIVAC, in particular, soon became a foil for comedic routines. There was not, early on, a single or uniform narrative thread, though there were common elements.

In post-mortems that appeared in the popular press and trade publications, network television broadcasts in general came in for high marks.[30] Where distinctions were made between them, CBS was seen by several critics as having had the best coverage overall.[31] As for election-night computing, some accounts evidenced wide-eyed wonder. In the genre, perhaps, of "man bites dog," some observers were enthralled by the idea of a machine outsmarting is human keepers as evidence that a wonderful new

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[29] Collingwood, "Report to the West," Nov. 5, 1952, WHS.

[30] A trade publication, *Radio Daily – Television Daily*, was among the most enthusiastic in reporting the overall broadcast coverage to be "unprecedented"; "Radio-TV First With Full Returns, *Radio Daily-Television Daily,* Nov. 5, 1952, 1, 3. All three networks "came through with flying colors," according to a report in the *San Mateo (Calif.) Times*; Bob Foster, "TV Sets New Mark With Election Night Coverage," *San Mateo (Calif.) Times*, Nov. 6, 1952, 29.

[31] See for example: Jack Gould, "C.B.S. Coverage of Election Returns Resulted in Landslide Victory for Network," *New York Times*, Nov. 7, 1952, 31; C.E. Butterfield, "Election on TV: Were the Robots Fully Successful?" *Washington Post*, Nov. 8, 1952, 25; "Machine vs. Man," *Variety*, Nov. 12, 1952, 25.

technology had arrived. A Philadelphia radio station, for example, began its day-after

broadcast this way: "At eight-thirty last night, a weird robot capable of juggling page-

long equations with amazing dexterity and even operating alphabetically, passed along

word that the chances were one-hundred-to-one that Eisenhower would win! Its name is

UNIVAC." [32] The story included an interview with a UNIVAC spokesperson who

explained the decision not to go with the computer's initial prediction by saying, "Well,

we lost our nerve!" [33] The piece ended the way it began, praising UNIVAC's "complete

ease" and "uncanny accuracy," and added: "When you think about it, the whole thing is

almost frightening!" [34] A newspaper column by Alistair Cooke in the *Manchester*

Guardian ran under the headline "'Univac' Forecast the Landslide" and reported that the

computer "was a couple of hours ahead of everything that walks and talks." [35] On the

morning after the election, a talk-show host on the Rural Radio Network in upstate New

York referred to the UNIVAC in amazement as a "kind of a look into the future."[36]

     Those writing and speaking about the television coverage of the election were by

no means unanimous in their assessment of the role played by – and performance of – the

computers and the decision by election-night broadcasters to include these novelties. And

here the frame of human-vs.-machine trope – and its variant, journalist-vs.-machine –

could cut both ways. The entertainment industry newspaper *Variety* reported that NBC

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[32] "Script as Broadcast," radio script, KYW, Westinghouse Radio Stations Inc., Philadelphia, Pa., Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[33] Ibid.

[34] Ibid.

[35] Alistair Cooke, " 'Univac' Forecast the Landslide," *Manchester Guardian*, Nov. 13, 1952,

[36] "UNIVAC Has Given Us a Glimpse of the Future," transcript prepared for Remington Rand, Barbara Hall's Scrapbook, Rural Radio Network, Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

and CBS had gone to "extraordinary and expensive lengths to 'gimmick up' the Ike-Adlai ballot coverage, with robot-like calculators occupying a prominent place on the TV rostrums." [37] The value of the computers to the broadcast was deemed "dubious at best."[38] The issue was not that these devices performed poorly, but that they could not deliver meaningful analysis. While they looked "expensive and awesome," the *Variety* reviewer argued, the machines did not know or understand "what the voter felt in his heart or what disturbed his mind."[39] That was deemed to be a job for the likes of Edward R. Murrow, H.V. Kaltenborn, Bill Henry, Lowell Thomas, John Daly, Walter Winchell and others. The message, in short, was spelled out in the lead of the *Variety* review: "If anything, TV's unprecedented coverage of last Tuesday's … election returns demonstrated that the machine will never take the place of the human."[40] For the reviewer, the UNIVAC and Monrobot – mentioned by name – became props in the service of lavish praise for fellow flesh-and-blood journalists.

On their New York-based radio talk show during the morning after the election, hosts Dick Kollmar and Dorothy Kilgallen skewered the computers as unfit for election-night work. And Kollmar said of Remington Rand, "I would hate to be a member of that company this morning if I'd had anything to do with the Univac."[41] Television writers for the *New York Times*, the *Washington Post,* and the *Philadelphia Inquirer* had equally dismissive accounts. At the *Times*, Jack Gould, who heaped praise on the CBS coverage

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[37] "Machine vs. Man," *Variety*, Nov. 12, 1952, 25.

[38] Ibid.

[39] Ibid.

[40] Ibid.

[41] "Kollmars Think Univac Made Poor Showing," transcript prepared for Remington Rand, Dorothy and Dick Kollmar, WOR, Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

in general, wrote of UNIVAC and Monrobot that "Tuesday also saw the first use on Election Night of the supposedly super-duper electronic brains, which can think in terms of a couple of quintillion mathematical problems at one time."[42] Gould then added a series of digs:

> The C.B.S. pride was called "Univac," which at the critical moment refused to work with anything like the efficiency of the human being. This mishap caused the C.B.S. stars, Walter Cronkite, Ed Murrow, and Eric Sevareid, to give "Univac" a rough ride for the rest of the evening in a most amusing sidelight to the C.B.S. coverage. At a late hour, N.B.C. still was taking its electronic brain, "Mon-Robot," pretty seriously…[43]

By contrast, Gould praised the "old journalistic technique" used by William H. Lawrence, a political correspondent for the *New York Times*, to report several scoops over the *Times* radio station, WQXR.[44] "When votes came in from doubtful states," Gould wrote, "he called newspaper men in different cities who could interpret what a relatively few ballots in key areas would indicate by way of state-wide trends."[45] In the *Washington Post*, television writer C.E. Butterfield hit the networks, too. While computers might be good at solving complicated mathematical problems, he wrote, the Monrobot and UNIVAC were still "in the kindergarten stage as far as TV returns are concerned," failing to live up to their advance billing.[46] And at the *Philadelphia Inquirer*, television writer Merrill Panitt's snickering review opened this way: "Say, those electronic brains NBC and CBS had for their election result telecasts were really

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[42] Jack Gould, "C.B.S. Television Coverage of Election Returns Resulted in Landslide Victory for Network," *New York Times*, Nov. 7, 1952, 31.

[43] Ibid.

[44] Ibid.

[45] Ibid.

[46] C.E. Butterfield, "Election on TV: Were the Robots Fully Successful?" *Washington Post*, Nov. 8, 1952, 27.

impressive, weren't they? Made you feel kind of – if you'll excuse the expression –

humble. Amazing the way the gadgets accepted questions, flickered their tubes for a few

seconds and, bingo! Wrong answer."[47] Panitt actually cited, in error, the first prediction

from the UNIVAC – an Eisenhower lead in electoral votes of 314 to 217 – as one that

had come from the Monrobot. But from the context of the piece, it seems likely that he

would have been equally critical of both computers for not calling for an all-out landslide

early on. Computers, in Panitt's telling, were just the wrong tool to use on election night.

While they could make quick work of specific mathematical problems, he conceded,

these problems must be precise and clear. But as for their use by the networks, he

wondered, "How can anyone determine precisely what basic information to give a

machine before putting to it the question of how an election will come out?" The headline

captured the sentiment of the column: "Electronic Brains Prove They Need Smart

Men."[48]

     In fact, one common theme among reviews that did not count the use of

"electronic brains" a success was to assign the blame for UNIVAC's misadventures, in

particular, to its human keepers. In some cases, CBS and Remington Rand were targeted

together. In others, a distinction was made between the two, with CBS itself cast as

something of a victim. In the *New York Daily News*, television critic Ben Gross recounted

the "about-face" in predictions attributed to UNIVAC in an item that began: "UNIVAC

Like A Woman."[49] He dismissed the machine as being as consistent as "you-know-what,"

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[47] Merrill Panitt, "Screening TV: Electronic Brains Prove They Needs Smart Men," *Philadelphia Inquirer*, Nov. 6, 1952, 26.

[48] Ibid.

[49] Ben Gross, "Televiewing and Listening In," *New York Daily News*, New York, Nov. 6, 1952, 80.

by which he made clear he was referring to "gals."[50] He also made clear that there was

also some post-election finger-pointing. "The boys around CBS are taking a lot of ribbing

and they admit the laugh's on them," Gross wrote. "But one thing they emphasize: These

predictions did not come from the mouths of their commentators, but from the mouth of

UNIVAC."[51] Another reviewer described the UNIVAC as having "brought the real laugh

of the evening" and as "very nearly being the 'goat' of the evening" with the prediction

of a close outcome at a point in the evening when an Eisenhower sweep was obvious, a

turn of events that both "irked" and "embarrassed" Collinwood.[52]

But even when CBS or Remington Rand or the UNIVAC itself came in for

bruising treatment, there was a tendency to make a distinction between the machine's

operation – deemed to have worked as programmed – and the operation of its human

operators, deemed to be the source of the UNIVAC's troubles. These stories seem to have

absorbed in some way – sometimes directly, sometimes indirectly – the explanations

offered by the CBS or Remington Rand camps. The Associated Press quickly turned out

a story about Arthur Draper's early morning mea culpa from Philadelphia before the CBS

audience. This story ran in the 6 a.m. edition of the *Baltimore Sun* under the headline:

"Electric Brain's Aberration Is All Its Masters' Fault."[53] One broadcasting trade

publication reported that "CBS-TV, which won praise from many for speedy reporting of

returns, encountered a less happy experience in the use of the Univac 'brain' as a

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[50] Ibid.

[51] Ibid.

[52] Bob Foster, "TV Sets New Mark With Election Night Coverage," *San Mateo (Calif.) Times*, Nov. 6, 1952, 29.

[53] Associated Press, "Electric Brain's Aberration Is All Its Masters' Fault," *Baltimore Sun*, Nov. 5, 1952, 6 a.m. edition, 8.

prophet." [54] "Spokesmen" were said to have laid the blame with "outside statisticians employed to operate Univac."[55] While the computer's keepers were questioning its initial predictions, Edward R. Murrow was said to have "scored a beat on Univac."[56] In the same camp of dismissive approaches was the *Chicago Daily Tribune's* Larry Wolters. In his column about television several days after the election, he included a two-paragraph item headed "Man vs. Machine." The "somewhat inglorious behavior of those highly publicized election night electronic marvels" – both the UNIVAC and "Mike Monrobot" – was said to have been the fault of "the people charged with presenting the problems in solvable fashion." [57] For that a share of the blame also went to the fallout from "overcautious pollsters."[58]

In its monthly issue after the election, *Electronics* magazine also panned the performance of computers on election night. Lumping together the UNIVAC on CBS, the Monrobot on NBC, and the "IBM Calculator" on ABC, the magazine reported, "In the opinion of many viewers and listeners, the results were considerably less spectacular than they were led to expect by advance publicity." [59]   But the article went on to note: "Technically speaking, the calculators did what they were expected to do, but difficulty arose in selecting appropriate past election data for setting up the problems and

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[54] "Network Reporting," *Broadcasting – Telecasting*, Nov. 10, 1952, 27, 85, 112-113.

[55] Ibid.

[56] Ibid.

[57] Larry Wolters, "Television News and Views," *Chicago Daily Tribune*, Nov. 10, 1952, C6.

[58] Ibid.

[59] "Computers Sweat Out Election Results; Nonpartisan electronic machines vie with human experts to predict outcome," *Electronics*, Dec. 1952, 14, 16.

interpreting results."[60] Featuring advance publicity photos of the UNIVAC and Monrobot in operation, the caption noted the contest between the two – "Univac (left) and Monrobot (right) also ran on November 4 in race to predict outcome of election on basis of preliminary returns and past elections."[61] The two-deck headline framed the machine's use in a different sort of contest in which both were found wanting in the story: "Computers Sweat Out Election Results; Nonpartisan electronic machines vie with human experts to predict outcome."[62]

In between kudos and outright dismissal, there was a middle ground of responses characterized by attempts at humor pointed in various directions. A tongue-in-cheek *Washington Post* editorial, titled "Unhappy Univac," began this way: "Well, it now seems that Professor Univac, the celebrated mechanical brain, damn well knew what he was talking about… The trouble was that none of those stupid humans, including his inventors, would believe him." The piece went on to speculate about whether the computer's feelings were hurt and whether it might be "sensitive to a degree quite beyond the power of our coarse and callous species even to imagine."[63] Another attempt at humor ran in the *San Francisco Chronicle* the following week when columnist Stanton Delaplane tossed around the idea of just running UNIVAC for president in another four years.[64] In fact, there were a number of pieces in print and on air that applied a light touch to the human-vs.-machine theme that was common in post-election accounts. At least

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[60] Ibid.

[61] Ibid.

[62] Ibid.

[63] "Unhappy Univac," *Washington Post*. Nov. 8, 1952, 8.

[64] Stanton Delaplane, "Short Circuit," *San Francisco Chronicle*, Nov. 14, 1952, 32.

twice on the morning after the election, newscasters on a Los Angeles radio station

recited the events of Arthur Draper's difficult night in this way. One referred to it as "a

lack of faith that turned into a serio-comic battle of the machine against man in which the

machine finally triumphed with and the man turned up with a collective red face

unparalleled in election history," and the UNIVAC was described as "the mechanical

monster which will apparently treat you right if you treat it right, and if you only trust

it."[65] The other advised the audience: "Take a firm grip, you humans, we have evidence

this morning that the day of the flesh and blood brain may be waning."[66]

On-air celebrities got in on the comedic references to election-night computer use.

On his program the day after the election, Arthur Godfrey aimed for laughs with this

tongue-in-cheek account of the UNIVAC's first prediction, as captured in a transcript

made for Remington Rand:

> It's supposed to be an amazing electronic device that would, at an instant's
> notice, before any human being could possibly detect a trend, it would
> predict which way the voting was going. So what happened? So first of all
> it wouldn't work at all. I understand they fed the very first returns into the
> thing, and you know what came out? The winner of the fourth race at
> Hialeah.[67]

Two days later, Godfrey brought up the subject again – this time saying he owed the

UNIVAC an apology after learning that it had been "uncannily accurate."[68] Still reaching

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[65] "Remington Rand Man Regrets Lack of Faith in Univac," partial transcript of radio broadcast prepared for Remington Rand, KNX, Los Angeles, Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[66] "UNIVAC Proves Correct Despite Human Doubts," partial transcript of radio broadcast prepared for Remington Rand, KNX, Los Angeles, Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[67] "Godfrey Explains Secret of UNIVAC," transcript prepared for Remington Rand, WCBS, New York, Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[68] "Godfrey Apologizes to UNIVAC," transcript prepared for Remington Rand, WCBS, New York, Nov. 7, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

for a laugh, he told someone else on the program, "You could be replaced by six vacuum tubes and a roll of wire."[69]

Beyond injecting humor into discussions of the election-night broadcasts, the UNIVAC also became a foil for comedic routines. In his television comedy program, Ernie Kovacs latched onto the UNIVAC for material the morning after the election and was still milking it the next month. The day after the election, he reported that J. Burlington Gearshift – the character of an oddball inventor played by Kovacs himself – would be on the next day with a "brain machine that will confound the nation," to be called the "Koviac."[70] When the Koviac appeared the next day, it was described this way by a transcription service hired by Remington Rand: "a burlesque model of an electronic computing machine," on which "various levers, control knobs and electric light bulbs were arranged in ludicrous fashion on the top and sides."[71] In an outing on Dec. 1, the Koviac was also said to have "a slit marked "For Used Razor Blades,'" along with "two small marks with "His" and "Hers" written under them" and, on the side, "an opening marked 'Out.'"[72] In the center was a switch Kovacs used to turn the machine on and off, and special effects included sounds of a motor, thuds, and a bell. Kovacs seemed to aim for laughs by extending the anthropomorphic way in which the UNIVAC had been framed on election night. Although the Koviac never seemed to function as expected, Kovacs said, in the role of Gearshift, that he wanted to reward it. The device "is almost

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[69] Ibid.

[70] "Scientist to Unveil Rival to UNIVAC," transcript prepared for Remington Rand by Radio Reports, Inc., WCBS-TV, New York, Nov. 5, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[71] "Koviac May Outdo Union," transcript prepared for Remington Rand by Radio Reports, Inc.], WCBS-TV, New York, Nov. 6, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[72] "The Koviac Slips Up on Simple Question," transcript prepared for Remington Rand by Radio Reports, Inc., WCBS-TV, New York, Dec. 1, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

human in its likes and dislikes," he said, "and I find that, much as throwing a fish to the seals, a shot of beer or two to the Koviac rewards this little machine."[73] Thus nourished, the Koviac was heard to exhale in apparent satisfaction.[74]

What the Broadcasts Meant to Viewers at Home

While the most enduring documentary record of responses to computer use on election night was certainly left by print reporters writing about television and partial broadcast transcripts prepared for Remington Rand, a smattering of available letters and telegrams from ordinary viewers also suggests a range of response to the broadcasts. Some of these communications survive in the papers of the late Walter Cronkite.[75] They reveal a sense of novelty at watching news on television, excitement at being brought so close to the action in a newsroom, and awe at seeing broadcast journalists handle the election-night chaos with the calm of officers in battle.[76] Letter and telegram writers deemed the performance of Cronkite and others to have been "excellent," "magnificent," "marvelous," "terrific," and "a whale of a job," among other terms of praise.[77] It was not

[73] Ibid.

[74] Ibid.

[75] Walter Cronkite Papers, Dolph Briscoe Center for American History (hereafter referred to as DB-CAH), University of Texas at Austin, Austin, Texas.

[76] The letters referenced here come from two parts of the Walter Cronkite Papers at DB-CAH: (1). Folders: Viewer Mail and Other Materials, Fall 1952-1953, Call No. 2M406.3 (hereafter referred to as Viewer Mail); and (2) Folders: Fan Mail, 1952-53, Call No. 2M485 (hereafter referred to as Fan Mail).

[77] From the following correspondence to Walter Cronkite, Viewer Mail, Walter Cronkite Papers, DB-CAH, which includes some individuals who knew Cronkite or were associated with the program sponsor, Westinghouse, and others did not know him: Robert L. Tiffany, letter, Nov. 5, 1952; Joseph Willicombe Jr., letter, Nov. 5, 1952; Tom Curtin, telegram, Nov. 5, 1952; Boyd Lewis, letter, Nov. 5, 1952; Stephen P. Parke, letter, Nov. 7, 1952; Bruce A. Coffin, letter, Nov. 8, 1952; Edgar T. Bell, letter, Nov. 10, 1952; Farley Manning, letter, Nov. 11, 1952; W.H. "Bill" Ritenbaugh, letter, Nov. 11, 1952; Dorothy M. Monahan, Nov. 21, 1952.

lost on viewers that all of this was taking place in an atmosphere of competition, as the writers would refer to checking out the various networks' offerings and settling on CBS. One enclosed Jack Gould's column, and another referred to it: "I agree with Jack Gould's opinion in the *New York Times*: CBS (and Cronkite!) won by a landslide."[78] Typical of this enthusiasm was a letter written by a couple from Closter, N.J.[79] They didn't get the name of Cronkite's network right – praising his "really great N.B.C." – but his "expert" handling of the night's events, they wrote, "made our spines tingle."[80] The letter expressed the "hope we will long remember these historic hours which you all brought to us in our homes."[81] Not all letters, however, were positive. For one writer from Jacksonville, Florida, the notion of watching news on television – which she did at a friend's house – was not at all a happy one. "The way your announcers put on was the most nerve-wracking thing," she wrote, explaining that they "couldn't say the simplest things without stuttering."[82] She concluded: "I do not ever want no damn TV set, and I don't care much for my radio. The printed words in newspapers and magazines do not stutter or stammer."[83]

Also, from the following correspondence to Walter Cronkite, Fan Mail, Walter Cronkite Papers, DB-CAH: Albert and Helen Ehringer, letter, Nov. 5, 1952; Dick Linkrou, telegram, Nov. 5, 1952; Jack McKibben, Nov. 6, 1952; George W. Umm, letter, Nov. 7, 1952; Allen Dibble, letter, Nov. 10, 1952; Marie Chiles, letter, Nov. 11, 1952; Earnest Hoberecht, letter, Nov. 17, 1952; Robert M. Fichter, Nov. 20, 1952; Mrs. Harry P. Pratt, letter, undated; Allen Dibble, letter, Nov. 10, 1952.

[78] Parke letter and Dibble letter, Walter Cronkite Papers, DB-CAH.

[79] Ehringer letter, Walter Cronkite Papers, DB-CAH.

[80] Ibid.

[81] Ibid.

[82] J.S. Meroney to Walter Cronkite, letter, Nov. 5, 1952, Fan Mail, Walter Cronkite Papers, DB-CAH.

[83] Ibid.

Many of the letters praising the broadcast did not mention UNIVAC, but two that did are instructive. One, from the president of a floor covering company in Chicago, adopted an anthropomorphic tone: "I am certainly glad that UNIVAC recovered from its workout and is in good shape today."[84] The other provides evidence that in the ephemeral circumstances of a television broadcast, it was easier to remember that a computer had been used than to remember whether the computer had been right or wrong. The owner of a furniture store in Keokuk, Iowa, wrote to ask Cronkite to settle a wager:

> When your Remington Rand Uni-Vac or mechanical brain went off the beam and gave a report of 100 to 1 odds about midway through the evening, who did it report had the odds in his favor, as that is the argument we are engaged in… One says the odds favored Stevenson and the other Eisenhower. Your written reply stating the man favored by the 100 to 1 odds will be greatly appreciated by return mail."[85]

It is not uncommon for journalists to field complaints of bias when reporting on politics, and they may take some satisfaction when the letters are equally distributed among partisans on either side of the political spectrum. But one letter suggests that the process of calling elections from limited and skewed early returns might lend itself to such complaints. A viewer in Brooklyn, favorably disposed to Cronkite before election night, wrote two days later that she was "bitterly disappointed and annoyed by your election coverage."[86] She concluded that Cronkite was "an Eisenhower man": "You deprecated every lead the Democrats had during the evening and in certain instances where the margin of lead was much greater in some states for the Democrats than it was

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[84] Robert L. Tiffany to Walter Cronkite, letter, Nov. 5, 1952, Viewer Mail, Walter Cronkite Papers, DB-CAH.

[85] John F. Flynn to Walter Cronkite, letter, Nov. 8, 1952, Fan Mail, Walter Cronkite Papers, DB-CAH.

[86] Cecily Feder to Walter Cronkite, letter, Nov. 6, 1952, Fan Mail, Walter Cronkite Papers, DB-CAH.

in other states for the Republicans, you made statements like 'the Democratic margin is to[o] narrow to hold' and 'the Republican margin is a sure sign of victory.'"[87]

Morgan Beatty's papers contain 89 items in a folder of correspondence with listeners or viewers for November 1952, but only two dealt with the election-night coverage.[88] One was a letter from an old school mate who noted having seen the broadcast and praised Beatty for a "swell job."[89] The other item referenced a letter from a man in St. Louis who wanted information about Monroe's "mechanical brain."[90] The letter itself does not survive, but a response to the letter does. In Beatty's absence – he was on vacation in the latter part of November – his secretary wrote to inform the writer that she was forwarding his letter to the Monroe Calculating Machine Company.[91]

As for Edward R. Murrow, his papers include a relevant letter sent by an old acquaintance, Ed Beattie.[92] The two had known each other in London during World War II when Murrow was famously reporting for CBS Radio on the German bombing of the city and Beattie was reporting for the United Press.[93] Charles Collingwood, referenced in the letter, had also been a United Press reporter early in the war before becoming one of

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[87] Ibid.

[88] Box 87, Fan Mail, November-December 1952, Morgan Beatty Papers, American Heritage Center (hereafter AHC), University of Wyoming, Laramie, Wyo.

[89] Emmett Durrett (name barely legible) to Morgan Beatty, letter, Nov. 9, 1952, Box 87, Fan Mail, November-December 1952, Morgan Beatty Papers, AHC.

[90] Letter to H.W. Hansen from "Secretary to Morgan Beatty," Nov. 21, 1952, Box 87, Fan Mail, November-December 1952, Morgan Beatty Papers, AHC.

[91] Ibid.

[92] Ed Beattie to Edward R. Murrow, letter, Nov. 6, 1952, *Edward R. Murrow Papers, 1927-1965*, microform, Reel 40, No. 356, courtesy of Kevin Grieves and Michael Conway, Indiana University School of Journalism.

[93] Sperber, *Murrow,* 161, 177, 186.

the "Murrow Boys" at CBS Radio in London.[94] Writing to Murrow two days after the election, Beattie adopted the same tone of humorous ambiguity seen in various accounts of the broadcasts. "Dear Professor," he began:

> Having followed with some fascination the difficulties experienced by one Charles (Toujours L'amour) Collingwood with his friend Univac two evenings ago, not to speak of certain admissions of tampering with the latter's cerebration, I feel it is opportune to suggest that in the future, Univac be left to its own devices and that, precautionarily, it be equipped with a gadget which will promptly spot any tampering and illuminate a small sign saying "TILT."[95]

The letter writer also called attention to the varying comfort levels that broadcasters showed in calling the election for Eisenhower: "Bill Henry was still playing it close to his chest a couple of hours after you and Eric [Sevareid] had labeled the trend for what it obviously was."[96]

The Notion of "UNIVAC" as Household Word

Though just a small number of what was in all likelihood a larger volume of mail sent to broadcasters after Nov. 4, these letters, taken as a whole, do not contradict the conclusion that election night was less than an immediate and unequivocal shot in the arm for computers – UNIVAC in particular. That idea would take more time to gel. And the story itself – and the version in which the night's comedy of errors starred fallible humans rather than a fallible machine – may have gotten a shot in the arm from Remington Rand's publicity apparatus.

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[94] Ibid., 177, 191-192.

[95] Beattie letter, Edward R. Murrow Papers.

[96] Ibid.

A week after the election, an editorial appeared in a Florida newspaper, the

Jacksonville Journal, under the headline, "A Machine Makes a Monkey Out of Man."[97]

The UNIVAC was seen as such a remarkable device that it was described in terms of

both wonder and terror, including the description of election night as "the dawn of a

horrendous new day.[98] The "world-famed … electronic brain," working with both

greater speed and accuracy than humans, was said to have "made monkeys out of the

political prophets and the statistical experts."[99] Why was the story – certainly old news by

Nov. 11 – being recycled? The editorial gives a clue: "The full story of the UNIVAC's

fruitless efforts to convince its human operators that General Eisenhower would win by a

landslide – a prediction that was overruled by human experts – has been disclosed by its

makers, Remington Rand."[100]

Additional stories and references appeared. Two days after the Jacksonville

Journal editorial, Ernie Kovacs featured another "Koviac" segment in which he indicated

that the UNIVAC, which he felt compelled to lampoon yet again, had been "brought

again to the light and publicized," and "seems to have caught on with the public

fancy."[101] And another two days after that, on Nov. 15, an article depicting the UNIVAC

as "America's newest conversation piece" appeared in the *Christian Science Monitor*.[102]

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[97] "A Machine Makes A Monkey Out of Man," editorial, *Jacksonville (Fla.) Journal*, Nov. 11, 1952, 4; microfilm available at the Jacksonville Public Library.

[98] Ibid.

[99] Ibid.

[100] Ibid.

[101] "Kovacs Improves on UNIVAC," transcript prepared for Remington Rand by Radio Reports, Inc., WCBS-TV, New York, Nov. 13, 1952, Box 6, Folder 8, Charles Collingwood Papers, WHS.

[102] Mary Hornaday, "UNIVAC–Conversation Piece; An Intimate Message From New York," *Christian Science Monitor*, Boston, Mass., Nov. 15, 1952, 20.

Written from Washington by Mary Hornaday, a respected veteran reporter, the article

described the UNIVAC as "an uncanny electronic brain that burst upon most of our

horizons on election night when the Columbia Broadcasting System featured it in its TV

coverage."[103] There was little ambiguity in Hornaday's piece. She was in the camp of

UNIVAC admirers, and she described Remington Rand's "harrowing election night

experience" as one in which the computer's human keepers lost their nerve. "A lot of

people," she wrote, "seemed to get the impression that UNIVAC wasn't much good,

when actually the mistakes were all human."[104] Her account covered the UNIVAC's

impressive price tag ($600,000), its dimensions (including a cabinet 14 feet long, eight

feet high, and eight feet wide), its memory (12,000 characters), and its speed (2,000

instructions per second), for which, she wrote, "the human is no match."[105] She also

described the UNIVAC's "potentialities," from tracking freight cars to solving higher

mathematics problems "in matrix algebra and in elliptic partial differential equations."[106]

Partisans from the Remington Rand camp were also busy with efforts to spread

the word. Arch Hancock, a company publicist, authored an article for the December issue

of *Systems Magazine*, a Remington Rand publication that circulated in the business

community.[107] Hancock held up the UNIVAC's behind-the-scenes election-night prowess

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[103] Hornaday, "UNIVAC–Conversation Piece," *Christian Science Monitor*; Hornaday's role as a pioneering female correspondent covering Washington politics can be found in Maurine H. Beasley, *Eleanor Roosevelt and the Media: A Public Quest for Self-Fulfillment* (Chicago: University of Illinois Press, 1987), 43, and Maurine H. Beasley, Holly Cowan Shulman, and Henry R. Beasley, editors, *The Eleanor Roosevelt Encyclopedia* (Westport, Conn.: Greenwood Press, 2001), 249-250.

[104] Ibid.

[105] Ibid.

[106] Ibid.

[107] Hancock, "UNIVAC Beats Statisticians on Election Night," NMAH;

as evidence that a new era had dawned, one in which the previously dominant technology in information management – high-speed punched card equipment – was made obsolete.[108] And Arthur Draper reprised and expanded on his own election-night revelation of UNIVAC's early prediction of landslide in a January 1953 presentation to a meeting of the American Institute of Electrical Engineers in New York. [109] He kept up the drumbeat of the humans, not the machine, as fallible. "There have been five major occasions of extreme importance where we have doubted that the UNIVAC was correct," said Draper. "In every single one of these occasions it has come out that UNIVAC was right and we poor humans were wrong."[110] He concluded with what he said was the moral of the story: "Don't THINK, let UNIVAC Do It For You!"[111] This last line, in all likelihood, was meant not only to tout UNIVAC, but to serve as a double-entendre dig at Remington Rand's chief rival, IBM: "THINK" was an IBM motto, as well as the name of an IBM magazine.[112]

In addition to these efforts by Hancock and Draper, Max Woodbury – the statistics professor who had devised the algorithm for predicting the election in 1952 and continued to be associated with the UNIVAC in several subsequent elections – recalled in a 2004 interview that Hancock involved him over time in efforts to spread the word of

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[108] Ibid.

[109] Draper, "UNIVAC on Election Night," paper presented at AIEE Meeting, Jan. 22, 1953, HML.

[110] Ibid.

[111] Ibid.

[112] IBM founder Thomas J. Watson Sr. launched the motto "THINK" when he earlier worked as general sales manager for the National Cash Register Company. It became an IBM motto and the title of a magazine published by the company; "Thomas J. Watson," Web page, IBM, http://www-03.ibm.com/press/us/en/biography/10152.wss; Rodgers, *THINK: A Biography of the Watsons and IBM*, 87.

what the computer could do.[113] But it was also apparent that the version of events from election-night 1952 in which the UNIVAC had made an accurate prediction that its keepers did not believe made for a good tale, that "man-bites-dog" sort of story and one relevant at a time when computers were being called "electronic brains" and the comparison to human capabilities was part of the landscape. Warren Wightman, who had helped produce the episode of *The Johns Hopkins Science Review* television program involving the UNIVAC and its co-inventor John Mauchly in the fall of 1952, called attention to just that aspect of the night's events in a letter he wrote to Mauchly a week after the election:

> We watched CBS on election night and were all very much interested and considerably amused when it was announced that somebody somewhere along the line had lost his nerve and refused to believe the "brain". Seems to me that it makes a good story, if not better, for publicity purposes, the way it turned out.[114]

Four years later, Phillip S. Vincent, who had been part of the 1952 election-night effort at Eckert-Mauchly, gave a talk about the experience to the Stamford Engineering Society in Connecticut. [115] While it had been a difficult night, he saw later what could not be seen at the time as an enormous benefit in the decision not to release that first prediction, early in the evening:

> Although we can take no credit for it, our reactions were one of the very fortunate occurrences in Remington Rand history. If we had released the first prediction, a few lines would have appeared in the next day's papers under some such heading as "Ain't science peachy!", but our very

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[113] Max Woodbury, interview by the author, Sept. 30, 2004.

[114] Warren Wightman to John Mauchly, Nov. 11, 1952; Box 3:B:1, Folder 7, John W. Mauchly Papers, UP-RBML.

[115] Vincent, "UNIVAC and Election Predictions," speech, UP-RBML Archived with Vincent's written speech is a two-page newsletter with a brief item taking note of the event; James J. Land, ed., "Company Confidential" [newsletter], vol. 1., no. 6, Remington Rand Univac, Sperry Rand Corp., November 1956, Box 3:C:8, Folders 190-191, John Mauchly Papers, UP-RBML.

evident human frailties coupled with Art Draper's public confession …
gave the whole performance a human interest slant and resulted in making
UNIVAC almost a household word.[116]

In the end, perhaps, what also made this a good story was that it could be

deployed, like the computers on election night themselves, in the service of many

agendas, and that a variety of meanings could be attached to it. Over time, the Monrobot

largely disappeared from accounts of election night 1952, and, as noted previously, the

UNIVAC-only story became standard. This was true even for those involved in the

nascent computer industry who would have been aware that two computers – quite

different from each other – had been in play on that election night. One of these was

Edmund Berkeley, an early advocate both for computer use in the insurance industry and

for general public knowledge about computers.[117] He knew William Burkhart from the

Monrobot camp, and, as earlier noted, Berkeley had featured a Burkhart invention in a

1949 volume on computing machines for a general audience, *Giant Brains, or Machines*

that Think. And in January 1953, Berkeley had featured both the Monrobot and the

UNIVAC in "Automatic Computers on Election Night," an article he coauthored.[118] It

appeared in a publication he had started – *The Computing Machinery Field*, later renamed

Computers and Automation – an early computer journal.[119] But just three years later,

when he coauthored a 1956 follow-up book to *Giant Brains*, the Monrobot had

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[116] Vincent, "UNIVAC and Election Predictions," 5-6, UP-RBML.

[117] Berkeley's role in linking the insurance and computer industries is explored by Yates, *Structuring the Information Age,* 113-132; for the public, Edmund C. Berkeley wrote *Giant Brains, or Machines that Think* (New York: John Wiley & Sons, 1949).

[118] Eugene F. Murphy and Edmund C. Berkeley, "Automatic Computers on Election Night," The *Computing Machinery Field* 2, no. 1 (January 1953); reprinted in *Computers and Automation* 16, no. 12 (December 1967), 26.

[119] The pioneering role of Berkeley in publishing *Computers and Animation* and its predecessor, *The Computing Machinery Field*, is described in Hook et al., *Origins of Cyberspace,* 323-324.

disappeared from Berkeley's account of election night 1952. [120] Though it mentioned that

computers "including a Univac" were tasked with election night predictions for television

audiences in 1952 and 1954, the telling in detail of the 1952 story was a UNIVAC-only

tale.[121] The oft-repeated events were recounted in a dramatic way – something that had

not been associated with the few retellings of the Monrobot's role – and Berkeley and his

co-author used the UNIVAC story to illustrate a section of the book on then-current and

future uses of computers in areas other than business and the military. "It seems evident,"

they concluded, "that automatic computer commentary on elections will henceforth be a

regular feature of election nights."[122]

1954: The *Detroit Times* and Wayne University Collaborate

At NBC, meanwhile, the election-night experience in 1952 did not provide the

network with incentive to keep the Monrobot story alive apart from the boasts that

appeared in a post-election press release. And while 1954 saw NBC openly opt to retreat

from computers as potential election-night tools, that was not the response of one local

newspaper to the events of election-night 1952. In 1954, the *Detroit Times* embraced the

idea of employing a computer for its own election-night reporting, with award-winning

results. The *Times* teamed up with the computation laboratory at Wayne University in

Detroit in a plan to predict the outcome of the Michigan governor's race from early

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[120] Edmund Callis Berkeley and Lawrence Wainwright, *Computers, Their Operation and Applications* (New York: Reinhold Publishing Co., 1956), 291-292.

[121] Ibid., 291-292.

[122] Ibid, 292.

returns.[123] It is a telling episode from the early intersection of the worlds of computing and journalism via election-night forecasting and does not appear to have been previously explored. That the story of the *Detroit Times'*s pioneering election-night efforts has not survived is not so surprising, considering that the newspaper did not survive long to keep the story alive. Within six years, the *Times* would be gone.[124] But in 1954, it was part of a robust competitive news environment in a city with several newspapers and broadcast news outlets.

The Wayne University computation laboratory was headed by Arvid W. Jacobson, who, until the early 1950s, had a dark past that had not caught up to him in his new role as a leader in establishing computer science as an area of study in higher education. Several years after leaving school at the age of 13 to work, Jacobson lost several fingers in a farm accident at the age of 18.[125] With the compensation he received for his injuries, he resumed his education, eventually graduated from college, and began teaching high school mathematics in a Detroit suburb.[126] He also joined the Communist Party. [127] In the early 1930s he was dispatched by his party superiors to Finland.[128] There he was arrested on espionage charges, convicted, and spent nearly three years in prison

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[123] John Creacy, "Use of Computer 'First' for Times," *Detroit Times*, Nov. 4, 1954, 1, 8.

[124] "Hearst Folds Detroit Times, Sells Its Assets to News; Knight's Free Press Steps Up 'Fiercely Competitive' Enterprise," *Editor & Publisher*, Nov. 12, 1960, 11-12.

[125] Robert L. Wells, "Pair's Future Darkened by Red Shadow," *Detroit News*, May 21, 1952.

[126] Harold Jackson, "Professor Lives Down His 1933 Role as Red," *Detroit News*, May 21, 1952; James S. Pooler, "Dr. Jacobson's Life Devoted to Others," *Detroit Free Press*, May 22, 1952, 22.

[127] Jackson, "Professor Lives Down His 1933 Role as Red."

[128] Jackson, "Professor Lives Down His 1933 Role as Red."

before American officials helped secure his release.[129] Once back in the United States, he

went on about his life, continued his education, and ended up on the mathematics faculty

at Wayne, where his past was not initially known.[130] He discussed it with the university

leadership privately when his name appeared in a 1950 book, *Seeds of Treason*, along

with associated newspaper stories.[131] No connection was made publicly then between his

past and present, and the university did not reveal it, supporting him instead in his efforts

to build up the computation laboratory.[132] But in 1952, with the publication of Whittaker

Chambers's *Witness*, the name "Arvid Jacobson" was again in print as an American

Communist from the 1930s.[133] Chambers did not make the connection to the Arvid

Jacobson at Wayne University, but that connection did emerge.[134] When the story did

become public, the administrators at Wayne University stood behind Jacobson.[135] So did

the members of Detroit's business and industrial community, whom he had gotten to

know through cooperative efforts to support the laboratory and have it do research to

[129] "American Arrested As Spy in Finland," *New York Times*, Oct. 28, 1933, 18; "American Pardoned by Finnish President," *New York Times*, July 3, 1936, 7.

[130] James S. Pooler, "Wayne Kept Ex-Red on Faith," *Detroit Free Press*, May 23, 1952, 12.

[131] Ralph de Toledano and Victor Lasky, *Seeds of Treason: The True Story of the Hiss-Chambers Tragedy* (New York: Funk & Wagnalls Co., published for Newsweek, 1950), 91-104; Pooler, "Wayne Kept Ex-Red on Faith."

[132] "Wayne U. Defends Ex-Red," *Detroit Times*, May 21, 1952, 3; James S. Pooler, "Wayne Kept Ex-Red on Faith," *Detroit Free Press*, May 23, 1952, 12. The university's response is described in part in two memos in the Wayne State University Archives (hereafter cited as WSUA) from Victor A. Rapport, Dean of the Wayne University College of Liberal Arts: Rapport to President David D. D. Henry, June 29, 1950, and Rapport to President Clarence B. Hilberry, Sept. 21, 1954, Subseries D, Box 14, Folder 19, Arvid Jacobson (Communism), 1952-1954, 1958, Files of the Office of the President: Clarence Beverly Hilberry, WSUA.

[133] Whittaker Chambers, *Witness* (New York: Random House, 1952), 295, 387; James S. Pooler, "Wayne Professor Revealed as Ex-Red; 20 Years' Fear of Betrayal of Post Ends with Identification in Chambers' Book," *Detroit Free Press*, May 21, 1952, 1.

[134] "Wayne U. Defends Ex-Red," *Detroit Times*, May 21, 1952, 3; James S. Pooler, "Wayne Kept Ex-Red on Faith," *Detroit Free Press*, May 23, 1952, 12.

[135] Ibid.

benefit local enterprises.[136] The crisis passed, and Jacobson continued his work in the lab,

in the classroom, in the community. He secured an experimental computer from the

Burroughs Corporation, the UDEC, or Unitized Digital Electronic Computer.[137] And in

the summer of 1954, he was instrumental in organizing a national conference at Wayne

University on training individuals to work in the fast-growing computer field.[138] Speakers

and attendees came from around the country and included such luminaries as Harvard's

Howard Aiken and UNIVAC co-inventor John Mauchly.[139]

A log book maintained by Jacobson's laboratory from 1953 to 1955 shows that a

variety of groups sought assistance.[140] Among them were the Ford Motor Company, U.S.

Rubber, Detroit Edison, the Detroit Health Department, and, from his own campus, the

Economics Department.   In the midst of this list was item number 45, "Election

Problem," from the *Detroit Times*. The first entry for this project was dated Oct. 19,

1954.[141] It noted that Jacobson and others from the lab had talked with *Times* reporter

Lou Arkles about election prediction. There was already a sample of Detroit precincts

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[136] "Backers Vote for Jacobson; Industrialists Hold Faith in Former Red," *Detroit News*, May 22, 1952.

[137] "Burroughs Laboratory and Wayne University Computers," *Digital Computer Newsletter* 5, no. 4 (October 1953), 9-10, published by the Office of Naval Research; Franklin M. Fisher, James W. McKie, and Richard B. Mancke, *IBM and the U.S. Data Processing Industry: An Economic History* (New York: Praeger Publishers, 1983), 83.

[138] Arvid W. Jacobson, ed., *Proceedings of the First Conference on Training Personnel for the Computing Machine Field,* held at Wayne University, June 22-23, 1954 (Detroit: Wayne University Press, 1955); the conference was reviewed or noted in the following: Paul Kircher, review of *Proceedings of the First Conference on Training Personnel for the Computing Machine Field*, by Arvid W. Jacobson, *The Accounting Review* 30, no. 4 (October 1955), 725-726; Franz Hohn, "The First Conference on Training Personnel for the Computing Machine Field," *The American Mathematical Monthly* 62, no. 1 (January 1955),8-15; "New Books," *Science*, New Series 121, no. 3145 (April 8, 1955), 503.

[139] Jacobson, ed., *Proceedings of the First Conference on Training Personnel for the Computing Machine Field.*

[140] Problem log book, Problems 41-52, 1953-1955, Box 5, Folder 5-23, Records of the Wayne State Computation Laboratory/Computer Center, WSUA.

[141] "#45 Election Problem," Problem log book, 157-158, WSUA.

selected, and more were to be chosen from other areas of Michigan. The prediction

method was to be worked out by Jacobson and Saul Rosen, who himself would go on to

become a notable figure in the early history of computing.[142]

The work of processing historic data to use as a basis of comparison began on

Oct. 22 and was not completed until 4 p.m. on election day, and time ran out to continue

the work of checking for errors.[143] The *Times*, an afternoon paper, reported in late

editions on the day after the election that its pre-dawn extra had rolled off the presses

with a forecast that seemed "fantastic" in a nationally-watched U.S. Senate race:

Democrat Patrick V. McNamara, who was then behind in the vote count, was predicted to

emerge the victor with a margin of 42,380 votes over his opponent, the Republican

incumbent Homer S. Ferguson.[144] By the next day, that prediction had proven correct,

and the margin of victory was off by just a few hundred votes.[145] The *Times* celebrated its

own journalistic victory with a front-page story that began this way:

> The Detroit Times scored a major 'first' yesterday when it successfully utilized the $200,000 computer, UDEC, as a practical tool for newspaper election coverage.
> Previously such computers had been used in making broad predictions on radio and TV early on election nights, but no newspaper had adopted them for serious election coverage because the results were not considered reliable.[146]

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[142] "Saul Rosen, 1922-1991," Center for Advanced Computing, Purdue University, http://www.rcac.purdue.edu/about/srosen.cfm.

[143] "#45 Election Problem," Problem log book, 157-158, WSUA.

[144] John Creacy, "Use of Computer 'First' for Times," *The Detroit Times*, Nov. 4, 1952, 1, 8.

[145] Ibid.

[146] Ibid.

The *Times* story also mentioned that CBS's Murrow had announced during election night, "with a lifted eyebrow," that although Ferguson was ahead in the vote count, the *Times* was predicting a win by McNamara with a margin of 42,000 votes.[147]

In recognition of the unusual election-night project, the *Detroit Times* later received an Associated Press award in Michigan for best coverage of a breaking news story.[148] Even before winning that accolade, however, the newspaper's election-night computing effort was singled out for recognition in publications including *Time* and *Editor & Publisher*. Echoing what the *Times* itself had proclaimed, *Editor & Publisher* reported that this was, "so far as is known, the first time that such a device has been utilized by a major newspaper as a practical instrument for election coverage."[149] And *Time* magazine compared the Detroit computer effort favorably to the CBS's 1954 election-night experience with UNIVAC, noting that the latter had been plagued for a time by errors in the data being fed to it.[150] The same issue of *Time* also noted that the *New York Times* had to recall about 80,000 early-edition newspapers on the same election night in 1954 out of concerns, as more returns came in, that its declaration of a victory for Averell Harriman in the New York governor's race had been premature.[151]

On election night in 1956, the *Detroit Times*, encouraged by its 1954 experience, teamed up directly with the Burroughs Corporation. Burroughs provided a new

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[147] Ibid.

[148] "'Brain' Set for Election," *Detroit Times*, Nov. 5, 1956; "'Brain' To Cover Election," *Detroit Times*, Nov. 2, 1956; John Creacy and Lou Arkles, "E101 Gives Detroit Times Six Hour Lead in Election Returns," *Detroit Times*, Nov. 8, 1956, reprinted in *The B Line*, Burroughs Corporation, Dec. 17, 1956, Burroughs Corporation Records, CBI.

[149] "Detroit Times Uses Electric Brain on Polls," *Editor & Publisher*, Nov. 20, 1954, 64.

[150] "The Tough One" and "Radio: Counting the Votes," *Time*, Nov. 15, 1954.

[151] "The Tough One," *Time*.

commercial computer, the E-101. It was set up in the *Times* newsroom – where its use was heavily promoted in advance. Its predictions were broadcast live to Detroit area television viewers on election night and then celebrated later through stories in the newspaper and in a Burroughs publication.[152] The disappearance heretofore of the story of the *Detroit Times's* role as an early adopter of computers for election-night journalism may be due, in part, to the disappearance of the *Times* itself. But in its efforts of 1954 and 1956, the *Times* had extended the pattern of election night as a venue for the coming together of journalists and technologist based on both an intersection of interests and on the ability of the computer to fulfill multiple roles – including analysis, promotion, and after-the-fact bragging rights.

The Lure of Election Night at IBM: A Calculated Risk for 1956

Although the *Hartford Courant*, the *New York World-Telegram and Sun*, and the Associated Press Washington Bureau would mention in 1952 post-election accounts that IBM equipment had contributed in their election-night efforts, IBM itself appears to have done little beyond an article in an in-house publication to publicly celebrate its election-night role.[153] One likely explanation is that the IBM equipment in use – though employed in a number of newspaper and wire service offices and even in conjunction

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[152] "'Brain' Set for Election," *Detroit Times*; "'Brain' To Cover Election," *Detroit Times*; Creacy and Arkles, "E101 Gives Detroit Times Six Hour Lead in Election Returns," *Detroit Times.*

[153] "The Dispatch That Heralded Ike's Landslide," *Hartford Courant*, Nov. 9, 1952, 18; Douglas Cornell, "Okay, Okay, Election 'Brain' – But Can It Write Leads Too?" *AP World*, Winter, 1952-53, 6; Edward Ellis, "Television Tells Election Story From W-T&S," *New York World-Telegram and Sun*, Nov. 5, 1952, 12; "IBM Machines Play Key Parts in Elections," *Business Machines*, Nov. 18, 1952, IBM-CA.

with an NBC broadcast on the West Coast – was not the very latest technology since IBM

was not quite ready to debut its first stored-program commercial computers.[154]

In 1954, though IBM had brought some of those computers to market, they did

not play a role in the national broadcasting of election returns, either. But immediately

following the 1954 elections, as IBM was battling Remington Rand for leadership in the

emerging market for commercial computers, key IBM executives were working up to a

conviction that their new machines needed to be in on the election-night action – in a big

way – in 1956. Records of behind-the-scenes deliberations and efforts at IBM provide a

rare look – not available in the same kind of detail for the Remington Rand and Monroe

efforts leading to their 1952 election-night roles – at that the degree to which seeking a

place at center stage on election night could involve a great many players and even reach

to the highest levels at a major corporation. These records also reveal something else

which appears to have been the case with computer use in 1952 based on after-the-fact

accounts but is established with more even certainty in 1956: that the technology provider

– in this case, IBM – sought out an alliance with a news organization, ultimately NBC, by

framing election night as an event in which their agendas would intersect.

Memos and reports of meetings at IBM suggest there was awareness from the

outset, however, that this path of action was not without considerable risk. The

conversation came to include key executives and managers with responsibilities related to

the company's media relations, image, sales, customer relations, technology, and overall

management. Where the idea started is not made clear in the available memos. But in late

November 1954, within days of a meeting of several of these individuals to discuss the

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[154] Discussed in Chapter 5.

possibilities for IBM role in reporting and analyzing 1956 election returns, an IBM

executive vice president, Louis H. LaMotte, was receiving memos and was soon

reporting, in turn, the company's president, Thomas J. Watson Jr.[155]

      While the end result of the efforts at IBM would be collaboration with NBC, that

specific arrangement was not envisioned at the outset. Telling is a Nov. 24, 1954, memo

to LaMotte, the executive vice president, from Harry T. Rowe, IBM's director of

information, about a recent meeting with several company officials in the office of T.

Vincent Learson, another veteran company executive whose promotion to vice president

in charge of sales would be announced a few days later. [156] On the table was a proposal to

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[155] This account is derived from documents in the papers of Louis H. LaMotte and Cuthbert C. Hurd at the IBM Corporate Archives, Somers, N.Y., as follows:

    From the Louis H. LaMotte Papers, Subject Files: Election Returns, Folder 11, Box 46: H.T. Rowe to L. H. LaMotte, memorandum, Nov. 24, 1954; T.V. Learson to L.H. LaMotte, memorandum, "Subject: Election Coverage – 1956," Nov. 26, 1954; L.H. LaMotte to T.J. Watson Jr., memorandum, "Subject: Election Coverage – 1956," Dec. 13, 1954; R.M. Bury to T.V. Learson, memorandum, "Subject: Election Coverage – 1956," Jan. 11, 1955; L.H. LaMotte to R. M. Bury, memorandum, "Subject: Election Coverage, 1956," Jan. 26, 1955; Gordon Smith to T.J. Watson Jr., memorandum, "Subject: Election Coverage," Oct. 31, 1956, with attachments of two NBC press releases: "Electronic Computing Wizardry and Instantaneous Communications Setup Pace Swifter Election Returns Than Ever Before on NBC-TV and Radio" and "Here's How NBC's Electronic Election Computing and Reporting System Will Work," Oct. 30, 1956.

    From the Cuthbert C. Hurd Papers, Election Forecasting, 1955-1956, Folder 7, Box 8: C.C. Hurd to R. M. Bury, memorandum, "Subject: Election Forecasting," Feb. 16, 1955; R. M. Bury to L. H. LaMotte, memorandum, "Subject: Election Forecasting," Feb. 21, 1955; W.H. Johnson to R.M. Bury, memorandum, "Subject: Election Coverage 1956," March 1, 1955; R.M. Bury to T.V. Learson, memorandum, "Subject: Election Forecasting," March 11, 1955; H.T. Rowe to R.M. Bury, memorandum, March 25, 1955; R.M. Bury to T.V. Learson, memorandum, "Subject: Election Coverage," April 5, 1955; Liston Tatum to F.G. Smith, memorandum, "Dr. Max Woodbury," Sept. 22, 1952; H.T. Rowe to T.V, Learson, memorandum, Oct. 5, 1955.

    Identification of these individuals as being executives and managers in the areas of media relations, image, sales, customer relations, technology, and overall management come from contemporary news items about executive promotions, new products, and computer issues, along with obituaries, in the *New York Times*, the *Wall Street Journal*, the *Hartford Courant*, and the *Christian Science Monitor*; biographical sketches in J.A.N. Lee, *Computer Pioneers* (Los Alamitos, Calif.: IEEE Computer Society Press, 1995); and biographical information provided by the IBM Corporate Archives Web site and reference staff.

[156] Rowe to LaMotte, Nov. 24, 1954. IBM-CA.. The announcement of Learson's promotion as vice president in charge of sales appeared in "I.B.M. Sales Executive Elected Vice President," *New York Times*, Nov. 29, 1954, 35. A few days earlier LaMotte, who had previously held that position, was promoted to executive vice president, as reported in "I.B.M. Elevates 2 Officers," *New York Times*, Nov. 24, 1954, 37. A news item the same month reported that Rowe, who had been director of advertising and information at

use an IBM innovation – a "740" cathode ray tube that had been the subject of a brief but

wondrous account just days earlier in the *Wall Street Journal* for its ability to provide a

graphical display of a computer's calculations.[157] In the election memo, Rowe reported

on a proposal to use the cathode ray tube for displaying the progress of the 1956 vote

count as compared to the 1952 count. He noted that the best means of acquiring live data

on election night and comparative data from past elections would be "collaboration with

the Associated Press," and he added: "Of course, the facilities of one of the principal

television networks would also have to be made available."[158] Not envisioned here was a

lopsided arrangement in which the eventual story of the story, so to speak, would position

a news organization with top billing and IBM merely in the role of helper. As the idea of

IBM involvement on election night began to take shape, it was conceived of as an event

in which IBM would play a starring role.

As the exploration continued, IBM's working group on the issue soon came

across the work done by the Wayne University computation laboratory for the *Detroit*

Times in the 1954 Michigan elections. A memo that circulated among several IBM

officials referred to this project as "the job that Burroughs UDEC did for the Michigan

elections" – a reference to the computer manufacturer and the model used – and noted the

conclusion of one IBM manager "that this is the most sensible approach yet that he has

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IBM since 1952 was going to focus exclusively on the director of information role as part of a
reorganization of the advertising and information department; "News in the Advertising and Marketing
Fields," *New York Times*, Nov. 18, 1954, 52.

[157] The device is described in: "'Windows' for Computers," *Wall Street Journal*, Nov. 18, 1954, 10. The
article noted that the "type 740 cathode ray tube output recorder" was intended for use with IBM's "giant
electronic computers," the 701 and 704, and that it would picture the computers " 'thoughts' … in the form
of graphs, geometrical figures, engineering symbols, or in words and numbers, just as they might show up
on a television screen, according to IBM."

[158] Rowe to LaMotte, Nov. 24, 1954. IBM-CA.

found for the contribution of computers to election returns."[159] LaMotte, IBM's executive vice president, saw the memo and wanted to know more about the Michigan project.[160]

Cuthbert C. Hurd, a leading figure in IBM's move into the computer field, reached out in another direction to Sig Mickelson at CBS to learn what he could about the network's forecasting in 1952.[161] After hearing about the role of Max Woodbury and the actions taken behind the scenes in the face of a "wide discrepancy" between the early UNIVAC-generated results and the pre-election polls, Hurd sounded a cautious note about election–night forecasting in memo to Roger M. Bury, a key IBM executive in the area of advertising and promotion.[162] "I want to point out the very large extent to which the whole forecasting procedure depends on individual judgment," wrote Hurd.[163] This ranged from the selection of particular counties for extrapolation to decisions about the mathematical models to be used. "Finally, and most importantly," wrote Hurd, "if you obtain a result which is a startling one, as in 1952, do you then trust your formulas or do your change your formulas in midstream as Dr. Woodbury did."[164] Only if IBM were willing to spend a lot of money and hire the nation's top statisticians, Hurd argued, could

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[159] Bury to Learson, Jan. 11, 1955, IBM-CA.

[160] LaMotte to Bury, Jan. 26, 1955. IBM-CA.

[161] Hurd to Bury, Feb. 16, 1955, IBM-CA. Mickelson's name is spelled "Michelson" in the memo; the context and his description as a CBS vice president make clear that the subject is Sig Mickelson.

[162] Hurd to Bury, Feb, 16, 1955, IBM-CA. In a November 1954 reorganization of IBM's advertising and information department, Bury, the director of sales promotion, was to be given authority for "advertising and information programs and applications, business shows, display and exhibit and special activities departments"; "News in the Advertising and Marketing Fields," *New York Times*, Nov. 18, 1954, 52.

[163] Hurd to Bury, Feb, 16, 1955, IBM-CA.

[164] Ibid.

the company jump into election-night forecasting. And writing in February 1955, more than 20 months ahead of the 1956 election, Hurd added: "it is already late to start."[165]

Hurd's caution generated more discussion and exploration on several fronts. One memo suggested that IBM solicit the names of potential consultants from John Tukey at Princeton, a major figure in the study and application of statistics, and Solomon Kullback, the head of research and development at the National Security Agency.[166] Other memos voiced concern about risks of various sorts. Should IBM try to engage in forecasting on election night, or should the company focus instead on a system for reporting the vote count? Going in either direction posed some peril. Bury, the executive in advertising and promotion, argued for the latter. "It seems to me," he wrote, "that if we invest a large sum of money to develop a dependable mathematical pattern, the most that we could achieve in the minds of the general public, is that IBM too was doing some predicting."[167] But beyond that potential for a ho-hum result, Bury offered up a darker scenario. "There is also the possibility," he wrote, "that were we to predict on NBC, and Univac predict on CBS, a battle of giant brains conceivably might be built up by some energetic publicity man, with a hazard of being discredited in the public's mind, if our predictions were not completely accurate."[168] Another IBM official, Walter H. Johnson,

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[165] Ibid.

[166] Johnson to Bury, March 1, 1955, IBM-CA, contains the reference to "Dr. Kullback of the NSA" and "Dr. Tokey of Princeton." Solomon Kullback's career is described in the National Security Agency's "Hall of Honor"; see "Dr. Solomon Kullback (1903-1994); 1999 Inductee," National Security Agency, http://www.nsa.gov/about/cryptologic_heritage/hall_of_honor/1999/kullback.shtml. John W. Tukey's career is described in a *New York Times* obituary that deemed him "one of the most influential statisticians of the last 50 years" upon his death in 2000; David Leonhardt, "John Tukey, 85, Statistician; Coined the Word 'Software,'" *New York Times*, July 28, 2000, A19.

[167] Bury to LaMotte, Feb. 21, 1955, IBM-CA.

[168] Ibid.

pointed out the problem with not taking a run at developing a method of forecasting to use with its machines, referred to generically in his memo as "EDPM," or electronic data processing machines: "It seems reasonable to expect the competitor to produce another election forecasting show in 1956, which would be substantially more dramatic than the use of EDPM for simple compiling and reporting."[169] The value of showmanship that had been inherent in the television networks' promotion of their computer use in 1952 was also, it seems, one of the values informing the deliberations at IBM with an eye to the 1956 presidential election.

As the conversation continued, Rowe, the director of information, summed up the situation as it stood in late March 1955.[170] He talked about the difficulty of making overtures to "the TV people."[171] There was disagreement at IBM about what the company's involvement on election-night might look like, and doubts from some about whether "a stunt" using the cathode ray tube display, given the need to code the data and enter it onto punch cards, would produce results faster than "a person with a crayon can mark the same results on a board."[172] And even at that, Rowe continued, "we merely would be reporting progress of the vote without any more dramatic impact than it can be

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[169] Johnson to Bury, March 1, 1955, IBM-CA; Walter H. Johnson held the title of manager of programming research in 1954 and then manager of customer assistance in 1955, according to the IBM Corporate Archives. He is cited in the *New York Times* at the end of 1955 as "head of the Customer Assistance Division" in an article on the effects of automation on employment: Homer Bigart, "Experts Divided Over Automation; Yale Conference IS Unable to Agree on How the New Devices Will Affect Jobs," *New York Times*, Dec. 28, 1955. 14. Another computer pioneer, John Backus, became director of programming research for several years starting in 1954, according to the IBM Corporate Archives.

[170] Rowe to Bury, March 25, 1955, IBM-CA.

[171] Ibid.

[172] Ibid.

obtained by conventional means."[173] He noted, too, that the Associated Press "was not

enthused" about providing information directly to IBM, and that "in the last election" –

perhaps a reference to 1954, though this was not made explicit in the memo – "NBC was

not interested in using 'giant brains.'"[174] But his memo suggests that he saw no choice for

IBM but to continue seeking a path to involvement in election-night broadcasting, despite

the risks, and he reported on a conversation with Charles Collingwood to drive home the

point:

> I think it is academic to say we must be on TV next election if we
> don't have a gimmick. It seems to me we have to do some stunt that may
> be a calculated risk.
> I was talking with Charles Collingwood at CBS-TV Sunday… He
> felt, and I agree, that even the last UNIVAC stunt, despite its kidding
> press, was worthwhile and had generally favorable results."[175]

As the search for a solution continued, those working on the issue at IBM talked

about contacting top pollsters, reached out to Woodbury, and even considered developing

"a continuing program of election coverage which might involve support of a fellowship

for example for a long term investigation."[176] By the fall of 1955, more than a year ahead

of the election, IBM was in talks with J. Davidson Taylor, the vice president in charge of

public affairs at NBC. IBM had found its partner. In late October 1956, the ultimate

arrangements were touted in a pair of breathless NBC press releases that were passed up

the chain of command at IBM to Watson, who by then was the company's CEO as well

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[173] Ibid.

[174] Ibid.

[175] Ibid.

[176] Bury to Learson, April 5, 1955; Tatum to Smith, Sept. 22, 1955; Rowe to Learson, Oct. 5, 1955, IBM-CA.

as its president.[177] The memo to Watson, dated six days before the election, indicated that the public relations advantage would extend to more than election night, with an "all-out advanced promotion" by NBC: "Spot announcements showing our equipment will be appearing frequently and we will participate in two or three of their regular programs between now and election night."[178] In addition to working with NBC on the national broadcast, the IBM memo reported to Watson that once every 30 minutes, NBC would be switching to local stations around the country, and IBM branch offices would be working with 16 of these. For 10 stations in nine cities, IBM model 650 computers would be used. In San Francisco, the more powerful IBM 705 computer – identified as the "Bank of America 705" – would be used. And in five cities, IBM would provide help using "conventional punched card equipment," its specific type not listed.[179]

The NBC-IBM plan for its national broadcast did include the use of data for trend analysis, without any mention of "forecasting" or "prediction." But the centerpiece of the arrangement turned out to be an extremely elaborate arrangement to report the vote – what NBC touted as "a major innovation in collecting and transmitting election returns," an "ingenious" and "unique transcontinental electronic system that will enable the

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[177] Smith to Watson, Oct. 31, 1956, IBM-CA. The memo identifies the attachments as copies of the "NBC press kit given to reporters" on the afternoon of Oct. 30. The two attached NBC releases – "Electronic Computing Wizardry and Instantaneous Communications Setup Pace Swifter Election Returns Than Ever Before on NBC-TV and Radio" and "Here's How NBC's Electronic Election Computing and Reporting System Will Work" – are dated Oct. 30, 1956. The same two releases with the same date are in the archival collection of the papers of a director of information at NBC: Box 179, Folder 13, Michael Horton Papers, NBC Records, WHS. One of these two press releases – "Electronic Computing Wizardry…" – appears with the same content but a different date, Oct. 23, 1956, in a collection of NBC trade releases at the Library of American Broadcasting, College Park, MD. The second of these releases is not in the LAB collection.

[178] Smith to Watson, Oct. 31, 1956, IBM-CA.

[179] Ibid.

network to report returns faster than ever before."[180] In early October and later that month, NBC issued press releases touting the "electronic computing wizardry" that would be critical to election-night coverage.[181] A second technology partner in this system was the Teleregister Corporation, which would provide a 50-foot-long bank of tally boards to display the vote counts generated by IBM's equipment. Davidson Taylor, NBC's vice president for public affairs, deemed four goals to be paramount: "speed, completeness, accuracy and analysis."[182] Unspoken were other paramount values for the journalist-technologist alliance: showmanship and bragging rights for technological wonders. NBC boasted that "the special electronic network marks the first major departure from traditional manually based collection and transmittal of returns in years."[183] An elaborate array of equipment was to be installed at Studio 8-H in New York. And out of view would be the guts of the new system, involving the deployment of hundreds people and a nationwide network of computing equipment and telecommunications facilities to aggregate returns from the Associated Press at the state level and speed them to New York. The data was to be used both in updating tally boards at the studio and for use by reporters and analysts in reporting on trends. Analysis for the benefit of the NBC broadcast was also to be done at IBM's Manhattan headquarters. Taking part in the operation there for the benefit of the NBC audience would be a veteran political analyst, Joseph C. Harsch, and a pollster, George Gallup. One NBC release

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[180] "Electronic Computing Wizardry…," press release, NBC, Oct. 23, 1956, LAB.

[181] "NBC Mobilizes Men and Machines to Present Fastest and Most Complete Returns on TV and Radio Tuesday, Nov. 6," press release, NBC, Oct. 2, 1956, and "Electronic Computing Wizardry," press release, NBC, Oct. 23, 1956, LAB.

[182] "NBC Mobilizes Men and Machines…," press release, NBC, Oct. 2, 1956 LAB.

[183] "Electronic Computing Wizardry…," press release, NBC, Oct. 23, 1956, LAB.

reported that the "huge '705' IBM 'electronic brain,'" which was due to "be utilized in 1957 to track the U.S.-launched manmade satellite," would be used on election night to "project voting trends, a relatively simple job for this giant."[184]

In fact, NBC was sending out mixed messages about its computer use in 1956. On the one hand, newspaper ads in cities around the country promoted the network's coverage by promising the use of "a new IBM electronic system that analyzes returns and automatically spots trends."[185] A two-page ad appearing in *Life* magazine went even further. It touted not only an "ingenious all-electronic system" to speed results and "specially adapted IBM equipment" that "eliminates all chance of human error," but the use of "the miraculous IBM electronic brain to analyze the data and project the ultimate direction of the election." [186] And this: "NBC will be first to bring you all developing trends, and first to announce the final winners."[187] A pre-election item in a trade publication, *Broadcasting Telecasting*, also lumped all three major networks together in using their "electronic accessories" to "predict the outcome of the balloting." But at least two newspaper columns, one before and one after the election, suggest that NBC had made a point of distinguishing its analysis from the process of predicting winners based on early returns. Val Adams, writing in the *New York Times* two days before the election, reported that NBC would not be using computers for projection of winners.[188] There was

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[184] "NBC Mobilizes Men and Machines…," press release, NBC, Oct. 2, 1956 LAB.

[185] For example, the ad – "See it <u>All</u>, Tonight on NBC!" – ran on election day, Nov. 6, 1956, in the *New York Times* (p. 71), the *Los Angeles Times* (p. A7), and the *Chicago Daily Tribune* (p. A6).

[186] "Find Out First on NBC!" advertisement, *Life*, Nov. 5, 1956, 134-135.

[187] Ibid.

[188] Val Adams, "TV-Radio Notes: Networks Announce Plans for Coverage of the Elections—Other Items," *New York Times*, Nov. 4, 1956, sect. 2, 13.

to be a "battle" between "electronic 'brains'" on election night, Adams wrote, but it would be between ABC and CBS.[189] NBC was said to be "a bit conservative," deciding to "forego the battle of the electronic forecasters" and focus instead on its new system, with IBM and Teleregister, to speed up the vote count.[190] No mention was made of the use of IBM computers both in the studio and at IBM headquarters to aid in analysis. In a column after the election, a *New York Daily News* columnist wrote that "NBC snubbed what it termed 'guess work' and, instead, chose to employ IBM and Teleregister machines for speed and accuracy … content to allow the actual votes unfold the battle of the ballot."[191]

Despite the mixed messages coming from NBC about computer use for prediction and regardless of precisely how NBC employed the computer equipment on election night, there is one striking sign of movement over the space of two years. In 1954, NBC's publicity machine cast humans – and specifically reporters – as superior to mechanical devices and the statisticians associated with them. Now, in 1956, the same publicity machine had hoped to assure the public and other intermediaries who might get the network's releases ahead of the election that "all computations will be done electronically to eliminate all chance of human error."[192] And this: "Each item of IBM and Teleregister equipment will have a vital functional role in the operation; none will be

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[189] Ibid.

[190] Ibid.

[191] Sid Shalit, "Machines Plus Humans Make for Fast Returns," in the "TV-Radio – What's On?" column, *New York Daily News*, Nov. 7, 1956.

[192] "NBC Mobilizes Men and Machines to Present Fastest and Most Complete Returns on TV and Radio Tuesday, Nov. 6," press release, NBC, Oct. 2, 1956, LAB.

used merely as set dressing."[193] The election-night coverage was, as it had been in 1952 and 1954, still under the supervision of William R. McAndrew, director of news. But machines were now being given billing as not only "vital," but serious. Perhaps the references to "human error" and "set dressing" were inside jokes or digs aimed at CBS, with that network's past use of a faux UNIVAC on the election-night set and the troubles blamed on humans who caused the real UNIVAC to go astray. But in any event, at NBC the acceptance of computing equipment and collaboration with technologists as both having a place in journalism – at least in election-night journalism – had taken a step forward. By comparison, in the week before the 1956 election, an independent television station in Newark, New Jersey, went to the trouble to announce, in the words of a two-sentence item in the *New York Times*, "that its coverage of election returns would not involve any electronic wizardry." [194] A spokesman for the station, Channel 13, was quoted as saying: "The only machines used on this program will be a news ticker and possibly a slide rule for late returns."[195]

Mixed Message at ABC - But Continuity in Election-Night Culture

When computers were introduced into the election-night mix at ABC in 1956, they were inserted easily into the by-now familiar election-night trope of "man vs. machine." But this time the network did not wait for the newspaper and magazine writers to employ that framework. ABC built that structure into its own framing of the way a

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[193] "Electronic Computing Wizardry and Instantaneous Communications Setup Pace Swifter Election Returns Than Ever Before on NBC-TV and Radio," press release, NBC, Oct. 23, 1956, LAB.

[194] "No Gadgets," *New York Times*, Nov. 4, 1956, sect. 2, 13.

[195] Ibid.

computer would be used. And for the computer's manufacturer, Underwood, another election-night tradition was in play: this would be the occasion to debut its newest computer system, the Elecom 125.[196]

Judging from one piece of evidence, it's likely that for at least some at ABC, the stance toward computers may not have been one of enthusiastic embrace. It's found in the papers of John Daly, ABC's well-known and award-winning newscaster who held the lengthy title of "Vice President in Charge of News, Special Events, Sports and Public Affairs."[197] In September, 1956, Daly wrote a message to a former colleague from ABC in New York that referenced election-night arrangements which NBC had made with IBM and CBS with Remington Rand. He wrote with apparent disdain that he would now have to move in the same direction.[198] There was no little irony, then, in the way Associated Press television writer Charles Mercer referred to Daly in a pre-election rundown on the networks' computer plans: "On ABC-TV we have Elecom 125 developed by the Underwood Corp., with John Daly at the controls, which will make its own forecasts of the outcome approximately every half hour."[199]

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[196] "Eisenhower Landslide Forecast by Elecom," *Elecom Pulse*, The Underwood Corp., Autumn 1956, 4-5, Box 80, Computer Documents, NMAH.

[197] "ABC Election Night Coverage Team," press release, ABC News, Oct. 30, 1956, Box 11, Folder 16, John Charles Daly Papers, WHS.

[198] John Charles Daly, letter to John Madigan, Station WMTW, Poland Springs, Maine, Sept. 20, 1956; Box 11, Folder 2, John Charles Daly Papers, WHS.

[199] Charles Mercer, Associated Press, "Machines to Mastermind TV Election Coverage," *The Hartford Courant*, Nov. 3, 1956, 4G.

On Oct. 30, ABC put out a pair of press releases with Daly announcing that the

network would debut the Elecom 125 on election night.[200] And Daly turned up on the

same day at the Elecom's home base – One Park Avenue in Manhattan – for a preview

arranged, according to Underwood, for business writers, newspaper reporters, and

"television personalities."[201] Though the ABC press releases mentioned several means for

detecting trends on election night, they did not say explicitly what *The Nation* magazine

made clear a few days later in its pre-election issue: "John Daly at ABC will pit human

brains against Elecom."[202] And Daly himself spelled out the arrangement explicitly in an

account that ran after the election in an Underwood publication.[203] It suggests that if he

were feeling compelled to join the computer age in order to satisfy the imperatives of

election-night showmanship, he was going to remain grounded in what was familiar.

Computer use would be cast as an experiment rather than an abrupt transition to

something new, at least new for ABC. "Since scientists tell us we are entering the age of

automation with machines increasingly taking over tasks formerly done by humans,"

Daly was quoted as saying, "our approach to the election coverage this year was inspired

by a natural curiosity to find out … just what role electronic automation can play in

predicting election results of the future."[204] So he set up a contest, one he himself framed

as "Man vs. Machine." It might tell whether the machine was efficient in predicting

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[200] "ABC to Have Exclusive Use of Newly Developed Electronic 'Brain' Being Built by Underwood Corp. to Predict Election Results" and "ABC Election Night Coverage Team," press releases, ABC News, Oct. 30, 1956, Box 11, Folder 16, John Charles Daly Papers, WHS.

[201] "Elecom 125 Meets the Press," *Elecom Pulse*, The Underwood Corp., Autumn 1956, 1, Box 80, Computer Documents, NMAH.

[202] Anne W. Langman, "Television," *The Nation*, Nov. 10, 1956, 374-375.

[203] "Eisenhower Landslide Forecast by Elecom," *Elecom Pulse*, 4-5, NMAH.

[204] "Eisenhower Landslide Forecast by Elecom," *Elecom Pulse*, 4, NMAH.

elections, or, on the other hand, "whether man, creator of the machine, could beat the machine at its own game."[205] The "Man Unit" was to be headed by pollster Louis Harris, working with a team from *Collier's* and making use of 54 voting areas selected in advance based on demographics and other characteristics, with data available on their voting history. Harris would have access to more than 100 correspondents around the country with phone lines to New York, where another 25 people were to help Harris compile the results. On the Elecom side of the ledger would be Louis Bean, author of a book on predicting election outcomes.[206] And the audience at home had been invited to join in, too. Ahead of the election, *Collier's* ran an elaborate guide to the 54 voting areas – their characteristics, location, voting history, and a place to write in the 1956 returns – along with an article by Harris titled, "Be Your Own 'Armchair Expert' – A TV Game for Election Night."[207]

The contest notwithstanding, Daly also made clear that the "Man vs. Machine" arrangement was itself just a supplement to ABC's traditional election night routine. "Our principal tool," he was quoted as saying after the election, "was still the team of some 300 newsmen, technicians and clerks."[208]

In the end, Underwood conceded after the election, "the fact that Eisenhower's decisive margin of victory became so apparent so soon lessened the challenge between

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[205] Ibid., 5.

[206] Bean's role is mentioned in "ABC Election Night Coverage Team," press release, ABC News, Oct. 30, 1956, Box 11, Folder 16, John Charles Daly Papers, WHS.

[207] Louis Harris, "Be Your Own 'Armchair Expert' – A TV Game for Election Night," *Collier's,* Nov. 9, 1956, 28-31.

[208] "Eisenhower Landslide Forecast by Elecom," *Elecom Pulse*, 5, NMAH.

the Elecom and the *Collier's* unit."[209] Still, Underwood insisted, there remained "plenty of visual excitement … created by the seemingly all-knowing" Elecom.[210] Even now, in the third election featuring computers, the machine's tendency to serve intersecting agendas and have multiple meanings – from tool to prop – still mattered. And, as Daly and ABC had arranged it, computing could be tried out and observed in action by collaboration with the technology's providers but without dismissing or replacing traditional means to the same ends.

The Critics: Coming to Terms, Slowly, with Election-Night Computing

Just as there was no preordained trajectory for computers to enter journalism on election night 1952, and just as that episode did not then guarantee the future use of computers in journalism or even just for election-night reporting, there was also no immediate acceptance of computers as appropriate for election-night broadcasting among the writers for newspapers and magazines who covered television news both as journalism and as performance. A sampling of the responses of the writers on that beat provides ample evidence that although some journalists were experimenting with computers – and then deciding whether and how to keep going – the willingness to embrace this new technology amongst the wider ranks of journalists was in no way universal after 1952. That would take years, and even then, as the technology and its application changed over time, it could never be taken for granted that the marriage of journalism and computing was a done deal. And the "man vs. machine" approach to

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[209] Ibid.

[210] Ibid.

evaluating the worthiness of computers for employment in journalism – at times an explicit or implicit "journalist vs. machine" comparison – would also live on after 1952.

Several days after election night in 1954, when CBS was the only network opting to employ a computer, *New York Times* television critic Jack Gould weighed in with a column that ran under the dismissive headline, "Election Projection: A Great Click-Clack in the Back of the Sacred UNIVAC." [211] Gould delivered a pointed critique that gathered steam as it went along. The column began this way:

> Television's coverage of the election returns on Tuesday night was probably not too bad in light of the general confusion arising from the close contests and unforeseen late shifts in tabulation. If some of the broadcasters got caught with their statistical projection showing, so did most of the assorted experts, both mortal and electronic.[212]

Gould reviewed the various networks' arrangements, dishing out compliments but also attaching a note of dismissal to each. NBC's four-way screen was "intriguing" but "did not add too much in terms of straight news coverage."[213] CBS had tally boards that were deemed elaborate, but the studio operation sometimes lacked coordination. ABC's arrangements did not rate a description, except to say that they "had the considerable advantage of simplicity." Gould's most scathing comments, however, were reserved for a computer not clever enough to know that it could not rely, again, on its human keepers, who supplied it, at times, with flawed data:

> … there isn't much doubt that Tuesday night will best be remembered for woefully wrong guesses of UNIVAC, the electronic brain, in predicting over C.B.S. a sweeping democratic landslide.

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[211] Jack Gould, "Election Projection: A Great Click-Clack in the Back of the Sacred UNIVAC," *New York Times*, Nov. 5, 1954, 30.

[212] Ibid.

[213] Ibid.

As UNIVAC's valet, Charles Collingwood, explained on the air, the electronic brain can only solve those problems presented to it: the gadget doesn't choose the problems in the first place.

UNIVAC's mistake, it seems, was simply to trust the human race on election night.[214]

Time magazine's take on the computer's role was no more generous in a recap of election-night reporting on television. [215] *Time* declared: "Probably the outstanding TV casualty of the night was Univac."[216] After first predicting a Democratic return to majorities in both the House and Senate with large margins in each, *Time* noted, the UNIVAC reversed course late in the evening and left Collingwood facing a prediction of a Republican majority in the House.[217] The memory of 1952 was still fresh, and *Time* quoted Collingwood as saying this: "We didn't know what to do. Should we change the machine? After all, last time the experts were wrong. I decided to stick with the machine."[218] The mistaken assignment of a House majority to the Republicans was attributed to a transcription error by a teletype operator. And the mistaken predictions of the size the Democratic majority was attributed by Collingwood to a model that gave too much weight to outsized Democratic margins in two states that were early to report. As in 1952, Collingwood's take on the situation – and on the computer – was said to be defensive: "After all," he was quoted as saying, "Univac is only human – that is, it can only make predictions based on the material that humans feed into it."[219]

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[214] Ibid.

[215] "Radio: Counting the Votes," *Time*, Nov. 15, 1954, http://www.time.com/time/magazine/article/0,9171,820436,00.html

[216] Ibid.

[217] Ibid.

[218] Ibid.

[219] Ibid.

On election night in 1956, the *New Yorker's* Philip Hamburger, writing as the peripatetic reporter with the moniker "Our Man Stanley," visited the UNIVAC installation at Remington Rand's Manhattan headquarters and chronicled the scene in a wry piece in the magazine.[220] Hamburger's response was, at best, ambiguous, and humor was his medium. He captured the hubbub this way:

> Room a madhouse. Close to a hundred human brains, attached to bodies, occupied room, some bending over teletype machines, others poring over stacks of papers at desks, others standing before restaurant-refrigerator-type machines with glass fronts and whirring disks inside. Control boards everywhere – red, green, amber. Terrifying.[221]

Hamburger met with Max Woodbury, who had moved on to the Mathematics Department at New York University's College of Engineering, and was introduced as a "tall, tense brain."[222] The professor explained the use of past data and told Hamburger the machine "brain" was working "like a dream."[223] Hamburger met with UNIVAC co-inventor John Mauchly, a "quiet-looking man."[224] The writer captured Woodbury's manifest pleasure, at first, that the computer's work was turning out to be "perfectly splendid," spitting out a forecast of an Eisenhower victory with such confidence that odds of 100-to-one were attached to it.[225] But then there was trouble, a problem with the Tennessee forecast. The computer said it was going Democratic. Woodbury thought that must be wrong and was validated when a courier arrived with a United Press dispatch

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[220] Hamburger's *New Yorker* article about use of the UNIVAC for the 1956 election is reprinted as Chapter 13, "Brain" in Philip Hamburger, *Matters of State: A Political Excursion* (Washington: Counterpoint, 2000), 93-96.

[221] Ibid.

[222] Ibid.

[223] Ibid.

[224] Ibid.

[225] Ibid.

saying that Tennessee was, in fact, going Republican. Then a courier arrived with some

more disconcerting news. The machine, said Mauchly, had "become persnickety about

accepting some data." [226]   There was debate between Mauchly and Woodbury about the

human and machine roles. "'Error lights,' said Dr. Woodbury," and then " Easy to blame

the machinery,' said Dr. Mauchly. 'Could be human failure.'" [227] A problem cropped up

with the Senate numbers. "She's goofed on the Senate," said Woodbury. [228] And that's

where Hamburger left things, with one last subtle dig: "Drs. Woodbury and Mauchly

joined technicians at control board. I went home and listened to returns on radio.

Eisenhower by landslide." [229] Hamburger was not alone in his tongue-in-cheek

skepticism. The *Times'*s Gould also wrote dismissively of computer use in reviewing the

election-night broadcasts: "All three chains employed their own versions of electronic

computers, which brilliantly confirmed the obvious."[230]

   The critics notwithstanding, computers did become a fixture on election night and

the computer-makers continued to see the exposure as valuable. In a 1960 ad after the

election, IBM made this clear by running a newspaper advertisement that asked: "Who

won the computer battle last night?"[231] IBM's answer to that question – telling readers,

"You did" – was, perhaps, predictable.[232] But then IBM also made clear the stakes for

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[226] Ibid.

[227] Ibid.

[228] Ibid.

[229] Ibid.

[230] Jack Gould, "TV: Landslide on C.B.S.; Cronkite and Crew Outpace the Other Networks in Election Returns," *New York Times*, New York, N.Y., Nov. 8, 1956, 79.

[231] "Who won the computer battle last night?" advertisement, *New York Times*, Nov. 9, 1960, 57.

[232] Ibid.

itself: "Election reporting is a dramatic way to demonstrate the reliability of modern

computer systems under conditions of stress and urgency."[233] That might be, but the

writers who covered broadcasting were still not all ready to concede that this was good

journalism or good television. *Variety*, for example, generally heaped praise on television

for the unexpected "Alfred Hitchcock touch" in covering the seesawing that went on in

the election-night conclusion to the close contest between John F. Kennedy and Richard

M. Nixon.[234] But the use of computers was panned outright:

> The electronic brains used by the three nets again raised a serious question as to their value. The fact that the patterns of this election (by far the closest since such electronic wonders were devised) didn't follow normal courses confused the machines, of course. This is to give an excuse as to why they erred so often, but it is no excuse for why they should have been used in the first place. At best, they confused televiewers, and made the webs look a little silly. They should, in fact, be good source material for comedians.[235]

Finally, in 1962, Gould – and the *Times*'s copy desk – announced the marriage of

computing and election-night to be solid. The headline read: "TV: Election Coverage;

Electronic Computers Prove Value in Forecasting Results—C.B.S. Excels." [236] The

technology that Gould saw as a questionable part of the process a decade earlier now got

top billing. "Electronic computers," he wrote, "clearly have taken over the drama of

reporting returns and introduced a new sophistication in quick forecasting of results."[237]

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[233] Ibid.

[234] "Election Nite: The Scoop & Scope," *Variety*, Nov. 16, 1960.

[235] Ibid.

[236] Jack Gould, "TV: Election Coverage; Electronic Computers Prove Value in Forecasting Results—C.B.S. Excels," *New York Times*, New York, N.Y., Nov. 8, 1962, 61.

[237] Ibid.

Gould showed a willingness to part with what had become another sort of post-election tradition. "Computing machines have been the target of almost as many jokes as mothers-in-law," Gould wrote, "but on Tuesday evening there was no gainsaying their influence. Their projections of probable winners on the basis of limited returns proved almost uncannily accurate…" [238] Gould also drew a larger lesson about the value of computers going forward – for analysts and for the viewing public: "Political analysts always have been more impressed by the results in pivotal districts than in early total returns. The computing industry now has placed an incredibly fast tool at their disposal and television has been the means of acquainting the mass public with the procedure. "[239]

One can read Gould's take on the election-night reporting as a sort of bookend – acceptance of computers, with their use evolving in sophistication over a single decade, as a worthy fixture of these broadcasts. He would go on to make a similar pronouncement a year and a half later, when, ahead of the 1964 California primary, he would declare: "The incredible computing machines have led the revolution in election reporting."[240]

But acceptance was still far from universal, complete, or permanent. On the same 1962 election night that saw Gould tip his hat to computer analysis, another significant television critic of that era, Lawrence Laurent of the *Washington Post*, was full of concerns.[241] "Election Night, 1962," he wrote, "just about did away with men and

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[238] Ibid.

[239] Ibid.

[240] Jack Gould, "TV and Press Wed by Computers," *New York Times*, May 31, 1964, sect. 2, 11.

[241] A brief summary of the key figures in television criticism of this area can be found at the Museum of Broadcast Communications' Web site. See "Television Criticism (Journalistic)," Museum of Broadcast Communications, http://www.museum.tv/archives/etv/T/htmlT/televisioncr/televisioncr.htm.

replaced them with machines."[242] Humans, it seemed, even had to put up with the

machines' required working conditions: "… chilled CBS reporters … had to shiver while

a cool, optimum, temperature was maintained for computers."[243] Laurent's critique was

that somewhere in the ascendancy of computer analysis on election night, serious

questions had become manifest about turf that had once been the purview of journalists

unaided by technology:

> An electronic brain is surely an awesome instrument and certainly civilization has to depend on them for solutions to complex problems. However, TV newsmen have been intimidated and it is just about time to take the devices out of the newsrooms and return them to space laboratories. For reporting, there remains that nagging doubt that some human being might have given the machine a bad diet of statistics or that a computer, in surpassing human capacity, may have taken on some of the doubts that are the beginning of true wisdom.
> I am not attempting to discredit the men who labored so long through the night. What I am suggesting is that the reporters return to the one trade for which they are fitted: Accurate details, given with calm assurance and without the mania for beating the opposition – by three-tenths of one second – to a forecast of a winner.[244]

Gould's own admiration for election computer-use in 1962 and 1964 did not mean

that he was beyond criticizing the way they were employed. Just as radio broadcasters

earlier in the century had wrestled with the best way to keep from overwhelming listeners

with returns, Gould was arguing in 1966 that the new ability to provide very detailed

analysis with great speed should be tempered with the need for clarity.[245] "The

computers need to be kept in their place lest a torrent of information merely clog the

[242] Lawrence Laurent, "Radio and Television; Machinery Seemed To Cast Final Vote," *Washington Post*, Washington, D.C., Nov. 8, 1962, B15.

[243] Ibid.

[244] Ibid.

[245] Jack Gould, "TV: Emphasis on Scoops Befogs Election Results," *New York Times*, Nov. 10, 1966, 95.

channels of communication," he wrote.[246] What was wanted, Gould argued, was more

"careful reflective commentary that gives shape and perspective to the meaning of the

electorate's will." [247] Two years later, in his final column about election-night television,

Gould echoed similar sentiments and some old themes. Computers on election night

were still inviting the evergreen comparison of cold machine vs. human journalist. They

also seemed to invite a contest involving an alliance of computers and pollsters on the

one hand and, on the other hand, the voters as players who could not be reduced to

predictable patterns of thinking and acting. "The era of automation could not cope with

the tightest presidential race in years," Gould wrote. "Old-fashioned vote counting

became an overnight vogue as the human beings took over from the machines." [248]

It is not my intent here to provide a detailed account of the evolution of computer

use in election-night reporting since 1952. In brief, just as the permanent campaign

became a feature of 20th-century politics, the networks developed a more or less

permanent apparatus for election coverage, with long-term planning before each new

political cycle. The creation and development of the unit at CBS, for example, is detailed

in 1983 dissertation by Michael Anthony Russo. [249] The calling of elections based largely

on formulas applied to early returns was superseded over time with a methodology that

relied heavily on exit polling. The race to be the first call the presidential contest fueled

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[246] Ibid.

[247] Ibid.

[248] Jack Gould, "TV: The Election as a 17-Hour Color Spectacular; Reliance on Computers Produces Confusion," *New York Times*, Nov. 7, 1968, 95.

[249] See: Russo, "CBS and the American Political Experience."

controversy over the projection of the winners while polls were still open on the West

Coast. That in turn led to studies, journalistic soul-searching, congressional hearings, and

a form of self-regulation over projecting the outcome where voting is still underway.

Major news organizations formed a series of alliances to share the cost of exit polling and

the aggregation of returns. Enormous amounts of advance planning went into the

arrangements for being able to project winners on election night. Even, so snafus

involving computerized analysis and controversial calls continued to be part of the

election-night story, most notably in 2000, which featured seesawing reports of the

outcome in a presidential contest that would ultimately be decided only five weeks later

by a Supreme Court ruling.[250] A study commissioned by CNN afterward concluded that

"television news organizations staged a collective drag race on the crowded highway of

democracy, recklessly endangering the electoral process, the political life of the country,

and their own credibility." [251] Decades after computer-based methodologies for election-

night analysis first appeared, election nights offered an increasingly rich buffet of data

points to seasoned commentators and journalists, but the hoped-for abatement of risk

over issues of timeliness and accuracy was still not a settled affair.

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[250] A report commissioned by CBS in the wake of the election-night troubles of 2000 includes an overview of election-night reporting practices in recent decades, including the use of exit-polling, collaborative arrangements, policies on calling races, and controversies. Linda Mason, Kathleen Frankovic, and Kathleen Hall Jamieson, "CBS News Coverage on Election Night 2000: Investigation, Analysis, Recommendations," CBS News, January 2001, http://www.cbsnews.com/htdocs/c2k/pdf/REPFINAL.pdf. A number of works explore the history of election-night projections after 1952, including, for example: Littlewood, *Calling Elections*; Martin Plissner, *The Control Room: How Television Calls the Shots in Presidential Elections* (New York: Simon & Schuster, 1999); and Bohn, *Broadcasting National Election Returns, 1952-1976*.

[251] Joan Konner, James Risser, and Ben Wattenberg, "Television's Performance on Election Night 2000: A Report for CNN," CNN.com,
http://archives.cnn.com/2001/ALLPOLITICS/stories/02/02/cnn.report/cnn.pdf.

Chapter 9: Conclusions

The path that led to this dissertation began with curiosity about why journalism evidenced a very limited acceptance of computer analysis as a reporting tool for decades into the era of commercial computing. For me, this was also part of a larger interest in innovations – how they arise, how they are received, how choices are envisioned and made about their use. When I looked for a starting point for computer use in journalism, the limited literature dealing in any way with the intertwined histories of computing and journalism pointed toward election-night forecasting in 1952. Here was an exception to the generally slow pace of diffusion I had witnessed for computer analysis in the newsroom during much of my own newspaper career. For at least one sort of use, election-night reporting on returns and trends, some journalists and their news organizations had been early adopters of computer analysis. As I began to explore the events of that election night in 1952 and the context for those events, I discovered – as I have chronicled in the preceding chapters – a much richer story than was previously understood. For one thing, here was not just a single network using one computer, but a competition between networks teamed up with makers of some of the latest computing equipment, known at the time as "electronic brains." There was CBS working with Remington Rand, manufacturer of the massive UNIVAC computer. There was NBC working with the Monroe Calculating Machine Company, manufacturer of a diminutive computer, the Monrobot. And there was ABC working with IBM, manufacturer of a transitional technology, actually a cluster of existing pre-computer IBM devices marketed together as the Card Programmed Electronic Calculator and capable of certain computer-like operations. The same or similar types of IBM equipment also played roles in a

variety of other journalistic settings on election night in 1952, including tabulation for some wire service offices and newspapers.

Given what appears to have been the limited deployment of computer analysis in the newsroom for so many decades, it was surprising to see such an early use of computers in journalism for election coverage. It was paradoxical, too, to see journalism as the route by which computers made such a visible entry into popular culture. And so beyond the question of what happened on election night in 1952, my study of this episode gave rise to the question of how it came about. That is, how do we make sense of this particular use of computers so early in their history as commercial products? How do we account for election night as the means by which computers would find their way into journalistic endeavors? And do events from this former era of new technology provide any help – in terms of questions to be asked, if not answers to be obtained – in thinking about our current era of new technology and the striking mixture of challenge and opportunity that it poses for journalism?

I have found that while the deployment of computers for election-night coverage appeared revolutionary, both then and in subsequent retellings, it was actually part of a pattern of what I have called here cultural continuity. Election night has been an underappreciated event in American life. Well back into the 19th century, election night offered a chance for newspapers to shine. That's because it offered the promise of what in the Internet era would come to be known as "eyeballs." Aided by the telegraph bringing results from great distances, newspapers positioned themselves at center stage, providing aggregate information that could not be officially provided by any single government body, especially in a presidential race. To hold the attention of crowds in the

street, newspapers offered not merely information, but also various amusements. New technologies were deployed to serve multiple purposes – to disseminate information to waiting crowds and, in the process, to serve as wonders for attracting public interest and enhancing prestige. Systems for rapid tabulation of votes – from the organization of armies of accountants to the deployment of early calculating machines and even the employment of humans with celebrated prowess in mental calculation – were important features of election night for decades before 1952. So were methods for detecting trends from early election results, and this was already an acknowledged science well before the 20th century. All of these factors – leading to ever more rapid reporting of results and trends to ever larger and more enthusiastic crowds – served well what I have called here the "story of the story." This was a feature of accounts that newspapers and later radio and television news operations would tell about election night, positioning themselves at the center of attention, and doing so through a rich confection of information, showmanship, technology, planning, and organization.

In 1952, the epicenter of computer activity on election night was New York, the same city where these patterns had been part of the election-night scene for generations. In that year, election night served as a venue for the intersecting interests of the nascent television news business and the nascent commercial computing industry. And the new technology to be deployed was capable of playing multiple roles. These were devices for calculation, but they were also props for showmanship and icons for enhancing the prestige and bragging rights of the networks employing them.

Still, there was nothing automatic or obvious here. Computers did not march into journalism as forces unto themselves simply because they were available. In fact, while

they might be touted in network promotions of various sorts in advance of their use, there was a clear risk that they might not do what they were touted as being able to do on election night. For the broadcasters, these risks could be contained by using both human analysis and machine analysis, by deploying them as independently functioning operations, and by giving primacy to a range of human players and their established or purported expertise in the arena of political prognostication and analysis. What is also clear is that there was resistance and skepticism in some quarters, expressed in subtle smirks or humorous remarks – or even overt glee – that the time had not come for veteran reporters and commentators to be replaced by machines. Computers might have made an entry into journalism on election night, but there were also signs that this was not a technology to be universally accepted in the newsroom for reporting and analysis.

While I have been emphasizing in this study what surprised me the most – the degree of continuity with past practices and values that was evident in the debut of new computer technology in journalism – I am mindful of the warnings of Gordon Wood about focusing on continuity in history. Toward the end of my work on this project, Wood published *The Purpose of the Past: Reflections on the Uses of History*, a collection of his essays on the works of other historians and commentary on the historian's craft.[1] He writes: "In graduate school I was taught that the task of a historian is to describe how people in the past moved chronologically from A to B … Since people rarely stay the same between A and B, describing and explaining change through time always seems to me to lie at the heart of a historical reconstruction."[2] It is always easy, indeed, to

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[1] See Gordon S. Wood, *The Purpose of the Past: Reflections on the Uses of History* (New York: Penguin Press, 2008).

[2] Ibid., 83-84.

highlight items from the past, to cherry-pick anecdotes, to be guilty of so-called "confirmation bias," to see what one sets out to see. This is a cardinal sin in the work of history just as it is a cardinal sin in journalism – or at least in the ideal practices of both. But the continuity that I found was not at all what I expected to see.

What has been especially salient to me in this study is the degree to which the cultural continuity I witnessed served as a foundation for change. Or, put another way, change – the introduction of the computer into the work of the newsroom – was made possible, despite some elements of resistance, because it was done in a way that rested on a solid foundation of practices and values from decades of election-night journalism. The adoption of the new tool was not wholesale, it was not immediately completed, and it was not evidence of a sharp break with the past. Also important was the capacity of this new tool to serve a variety of purposes, satisfy a variety of agendas, and meet a variety of needs. It had a purported utility as a device for computation. But it was also useful as an image and an icon even if, in its application on election night, its utility as a device for computation was less than convincing.

It is here that the two theoretical frameworks I discussed at the outset of this study – the diffusion of innovations, from the field of communication studies, and the social shaping of technology, from the history of technology and culture – are worth bringing back into focus. I believe they have a point of intersection in the notions I have articulated here about the relationship between continuity and change in the introduction of the computer into journalism. What is important in both of these frameworks is the factor of continuity – the ability to adopt change in some dimensions without a sharp break in all dimensions, or the degree to which a new tool can be used in a fashion

consistent with old ends and old values. The findings of this study of election night 1952

and its historical context are of particular value, I believe, in providing an example of the

way in which a technology and associated practices may not merely spread from one

domain to another – from the world of engineers and programmers to the world of

journalists, in this case. Rather, this diffusion may be facilitated, especially where there

are elements of risk and resistance, by the capacity to serve multiple agendas in both

domains and by taking advantage in each domain of a range of meanings associated with

the new technology – from tool to symbol to means of commanding center stage in a

larger cultural competition for attention and respect.

The More Things Change…

Among the themes explored in this dissertation is a twinned pair – the place of

election night as a venue for showcasing technology, and the place of election night as a

venue in which the use of technology is both embraced and contested. The appearance of

the computer as a new technology for use in election-night journalism was greeted as a

promising tool, a needless intrusion, a wonder to behold, and a gimmick with little if any

redeeming journalistic value. If evidence were needed that these themes are not limited

to past eras in the intertwined histories of journalism and technology, the most recent

decade has surely offered some prime examples.

Consider, for example, the degree to which computers, decades after their

adoption as tools for election-night journalism, continued to engender resistance from

some quarters and continued to call up the computer-vs.-journalist motif – even from

some voices in the very newsrooms that make a big deal of their computer arsenals.

Consider, too, election-night's seemingly endless capacity to serve up new technology to serve old purposes – with surprising plot twists and wrapped in a great deal of fanfare.

In 2000, there was the late Tim Russert, one of the big names in political journalism, Washington bureau chief for NBC News and moderator of the Sunday morning staple, *Meet the Press.* In the tight 2000 presidential contest that would provide more controversy than clarity about the outcome in the hours, days, and then weeks after the polls closed, some of the buzz about the intersection of election-night journalism and technology focused on a throwback, with Russert at center stage.[3] As Russert tried to help the audience comprehend the meaning of the electoral vote count, he jotted down the names of key contested states on the back of a legal pad and held it up to the camera. As more results came in, he crossed some states out and added others and revised his arithmetic, exploring the possible and likely outcomes. As the pad became messier, an NBC producer sent out for a pair of hand-held dry-erase boards and markers, and that's what Russert used as the evening wore on and turned into the next morning. Russert reveled in his low-tech approach. At one point, when asked a question by his colleague and *NBC Nightly News* anchor Tom Brokaw about how the Republican candidate might win without Pennsylvania, transcripts show Russert replying this way: "Tom, forget all the high tech computers. Take out your slate and your pen and it's the good old days are back. George W. Bush can get the 276 electoral votes if he wins Arizona, Arkansas, Colorado, Missouri, Nevada, New Hampshire, Oregon, Tennessee, West Virginia,

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[3] Sources include: Tim Russert, *Big Russ and Me; Father and Son: Lessons of Life* (New York: Hyperion, May 10, 2004), ix-xi. Transcripts of the segments of "NBC News: Decision 2000" in which he used his low-tech tools on Nov. 7 and Nov. 8, 2000, are available via Lexis-Nexis.

Wisconsin and, of course, Ohio."[4] Later in the evening, again speaking with Brokaw,

Russert advocated grouping states that were too close to call at that point and looking at

their past performance: "It's better than the computers tonight, Tom. Trust me."[5] And

still later, several hours after midnight, Brokaw was recounting the embarrassing

performance of various television networks, including NBC, when it came to calling the

pivotal state of Florida, prematurely announcing a victor there and then prematurely

doing it again. Russert's reply: "If you'd just stayed with these simple boards, you

wouldn't have those problems with those highfalutin computers, Tom."[6]

Russert's down-to-earth, low-tech approach would itself become a subject for

news stories and even a display on the Web site of a journalism think tank, The Poynter

Institute.[7] *TV Guide* and *TV Land* deemed it one of the top 100 moments in television

history, and it was included in a televised special about those landmark events.[8] Russert

would use the episode to open his 2004 autobiography.[9] And a year after Russert's death

in 2008, his colleague Keith Olbermann referenced Russert's use of the whiteboard on

election night 2000 in an on-air tribute: "As the technology increased and overwhelmed

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[4] "NBC News: Decision 2000," NBC, Nov. 7, 2000, 8 p.m. segment, available via Lexis-Nexis.

[5] "NBC News: Decision 2000," NBC, Nov. 7, 2000, 10 p.m. segment, available via Lexis-Nexis.

[6] "NBC News: Decision 2000," NBC, Nov. 8, 2000, 4 a.m. segment, available via Lexis-Nexis; a transcript of this exchange is also online: "Countdown with Keith Olbermann," MSNBC, June 12, 2009, http://www.msnbc.msn.com/id/31370697.

[7] "Tim's Tablet: The Story of an Upgrade," The Poynter Institute, http://www.poynterextra.org/TimsTablet/.

[8] "The 100 Most Memorable TV Moments," *TV Guide* 54, no. 49, issue 2697 (December 5, 1981), 31-48; and "The 100 Most Memorable TV Moments," Episode 2: Moments 80-61, *TV Land*, Dec. 7, 2004, Viacom International Inc. Item 68 in the *TV Guide* list was labeled "Tim Russert Tallies the Vote," with this description: "On a confusing night, NBC's Russert turns his low-tech election whiteboard into a board of education" (p. 44).

[9] Russert, *Big Russ and Me,* ix-xi.

the news, he alone had the presence of mind to throw on the brakes and reduce the chaos of that election night to terms and means that were unmistakably clear."[10]

Here was election-night's relationship with technology turned on its head – the novelty was Russert's return to an old-fashioned tool and a time-honored election-night methodology. But the story doesn't end there. On election night 2004, NBC broadcast from glass-walled studio space set up overlooking Rockefeller Plaza, dubbed "Democracy Plaza," decked out in patriotic colors and outfitted with a variety of "multimedia bells and whistles," as one newspaper described the setting.[11] Devices constructed to enhance the broadcast were reminiscent of the long history of election nights in New York, not to mention NBC's efforts over the years to compete for a street-level audience. The famous ice-skating rink in the plaza was converted into a map of the country, the states to be colored blue or red to mark electoral votes gone to one candidate or the other. Harking back to the thermometer-like display of lights running up the Times Tower in 1952 to keep a tally of the candidates' progress, NBC arranged for enormous banners – one red, one blue – to be pulled up the face of its building at 30 Rockefeller Plaza by window-washing platforms until one candidate or the other reached the magic number of 270 electoral votes – at the 12th floor.

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[10] "Countdown with Keith Olbermann," MSNBC.com, June 12, 2009, http://www.msnbc.msn.com/id/31370697, downloaded Sept. 5, 2009.

[11] The setting is described by Peter Johnson, "NBC Supersizes Set, Keeps Erase Board," *USA Today*, Nov. 3, 2004, 10A; discussion and reference to the rink and the banners appear in hour-by-hour transcripts for NBC's "Decision 2004: Election Night," Nov. 2-3, 2004, available via Lexis-Nexis. A video clip showing the setting is available as "NBC News Decision 2004: Election Night Open" on YouTube at http://www.youtube.com/watch?v=NWzBUsRNHHs.

Tim Russert was there again, too, doing his math by hand. But, as anchor Tom

Brokaw put it, "We've upgraded him this year." [12] In place of the "old grease board," said

Brokaw, "he's gone electronic on us."[13] Russert had been outfitted with a device about

the size of his previous legal pad and dry-erase board: the "Stylistic ST5000 Tablet PC"

manufactured by Fujitsu, which also proudly issued a press release touting its election-

night role.[14] This time, as Russert jotted down his electoral-vote arithmetic on the face of

the electronic device, he could hold it up to the camera, as in 2000. But what he wrote

could also be transmitted directly from the device to the television image seen by viewers

and to a display above "Democracy Plaza" measuring 22 by 30 feet. The gadget also

allowed Russert to write his numbers under photos of the contenders and to manipulate a

color-coded map of the United States.

Once again, election night had offered a chance to showcase technological

innovation – even if it was in the service of a methodology used to contest the dominance

of computer-based projections. Here, too, Russert was apparently set to contain the risks

of machine failure. *USA Today* reported that he had one of the old-fashioned boards

under his desk – just in case.[15]

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[12] "Decision 2004: Election Night," transcript, NBC, Nov. 2, 2004, 7-8 pm segment, available via Lexis-Nexis; video of Russert using the new device is available at "Tim's Tablet: The Story of an Upgrade," Poynter Institute, http://www.poynterextra.org/TimsTablet/.

[13] Ibid.

[14] "NBC Utilizes Fujitsu Stylistic ST5000 Tablet PC to Reveal Updates During Presidential Election Coverage 2004," Fujitsu press release, PR Newswire, Nov. 3, 2004, online at http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=109&STORY=/www/story/11-03-2004/0002353601&EDATE=; also: Press Release Archives, November 2004, Fujitsu, http://www.fujitsu.com/us/news/pr/archives/month/2004/index_nov.html.

[15] Peter Johnson, "NBC Supersizes Set, Keeps Erase Board," *USA Today*, Nov. 3, 2004, 10A.

Another pair of examples that suggest the staying power of some of the patterns explored in this dissertation played out on the Cable News Network during reporting on the 2006 and 2008 elections. Two years after Russert's "upgrade," veteran journalists Wolf Blitzer and Jeff Greenfield were covering the 2006 midterm Congressional and gubernatorial races for CNN. In a very tight race for governor of Virginia, the counting of votes was swinging one way and then another, back and forth, leaving the outcome too uncertain for a projection. "I have to admit to you," Greenfield told Blitzer, "that I really like watching races where all of the computers and all of the projections and all the modeling are thrown out the window and people sit there and actually count votes." [16] Blitzer replied, "The good, old-fashioned way of actually counting the ballots. It's encouraging…."[17] On a roll, Greenfield added: "If we hadn't banned smoking in this room, I would have had an old-fashioned politician with a cigar in his mouth, a pencil and some crumpled paper chucking the numbers for us."[18]

But two years after that, in 2008, Blitzer was playing another role, more now like the P.T. Barnum of election night, preparing the audience to be dazzled.[19] "I want you to watch what we're about to do," Blitzer said, "because you've never seen anything like this on television."[20] There was a drum roll and dramatic music, and then before him an image materialized, not quite life-size, but close, outlined in shimmering light. Clapping

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[16] "Election '06," *The Situation Room*, Wolf Blizter, host, CNN, Nov. 7, 2006, 9-10 p.m. segment, http://transcripts.cnn.com/TRANSCRIPTS/0611/07/sitroom.05.html.

[17] Ibid.

[18] Ibid.

[19] Election Night Coverage, CNN, Nov. 4, 2008, 7 p.m. segment, LexisNexis; the video is available on YouTube, titled "CNN 1st Time on TV, Jessica Yellin Hologram - Star Wars," CNN television program excerpts, Nov. 4, 2008, http://www.youtube.com/watch?v=0SIS2ZwkWDg.

[20] "CNN 1st Time on TV …Hologram," Nov. 4, 2008.

could be heard from somewhere off-screen in the studio. "Alright, a big round of applause. We did it," said Blitzer. "There she is, Jessica Yellin."[21] It was a CNN correspondent actually hundreds of miles away in Illinois, where she was waiting along with a massive crowd for Barack Obama, the soon-to-be President-elect. Blitzer addressed her: "I know you're in Chicago, but we've done something, a hologram, we beamed you in."[22] Yellin gave her report and answered Blitzer's questions, and then they returned to a discussion of the technology. "How excited are you Jessica, that this is the – you're the first one that we've beamed in to the CNN election center?"[23] "It's like I follow in the tradition of Princess Leia," she replied, a reference to an iconic holographic image from the 1977 science fiction film, *Star Wars*.[24]

This bit of CNN showmanship, which also included beaming in musician and Obama supporter William "will.i.am" Adams, was met with a range of responses. There were some admiring accounts – not the least of them a story on CNN's own Web site. It explained how "CNN showcased groundbreaking technology" on election night.[25] Jessica Yellin, the reporter, weighed in. "This is about what we can do," she said, "about pushing the envelope and pushing the boundaries."[26] The Web site of *Wired* magazine, which reports on the intersection of contemporary technology and culture, deemed the CNN technology "cool" – a day after the site also ran a tribute to Univac's 1952 election-

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[21] Ibid.

[22] Ibid.

[23] Ibid.

[24] Ibid.

[25] Chris Welch, "Beam me up, Wolf! CNN Debuts Election-Night 'Hologram,'" CNN.com, Nov. 6, 2008, http://www.cnn.com/2008/TECH/11/06/hologram.yellin/index.html?iref=newssearch#cnnSTCText.

[26] Chris Welch, "Beam me up…"

night performance.[27] The *Baltimore Sun's* television critic began an election-night blog

entry this way: "I know it's technological razzle-dazzle and some purists will argue that

the money could somehow be better spent on nuts-and-bolts, boots-on-the-ground

journalism, but at 7:15 p.m., CNN beamed a hologram of correspondent Jessica Yellin

from Grant Park in Chicago to its election headquarters in New York, and it was

stunning."[28] One of CNN's technology providers featured laudatory excerpts from news

coverage on the company's own Web site, along with this headline from *Time* –

"Election Night: Whiteboard Out, Holograms In."[29]

From the world of the technological purism, meanwhile, came grousing that this

wasn't really a true hologram – that is, not a three-dimensional image projected onto the

CNN set – but a two-dimensional image mixed digitally into what the audience saw but

not seen on the set by Blitzer himself.[30] And especially interesting, for our purposes,

were the responses of a number of journalists on the television and technology beats who

were covering the election coverage – including some writing in a venue, the World

Wide Web, which was itself still in the early years of finding legitimacy as a medium for

[27] Jose Fermoso, "How CNN's Holograms Almost Stole the Show," Gadget Lab, Wired.com, Nov. 5, 2008, online at http://www.wired.com/gadgetlab/2008/11/cnns-hologram-t/; Randy Alfred, "Nov. 4, 1952: Univac Gets Election Right, But CBS Balks," Wired.com, Nov. 4, 2008, http://www.wired.com/science/discoveries/news/2008/11/dayintech_1104.

[28] David Zurawik, "CNN Scores Early With Jessica Yellin, the Hologram," Z on TV blog, *Baltimore Sun*, Nov. 6, 2008, http://weblogs.baltimoresun.com/entertainment/zontv/2008/11/.

[29] "VirtualVu – The CNN Hologram," STATS, http://www.stats.com/VirtualVU-Case-Study.pdf. The headline is from James Poniewozik, "Election Night: Whiteboards Out, Holograms In," *Time*, Nov. 5, 2008, http://www.time.com/time/magazine/article/0,9171,1856990-2,00.html.

[30] See for example: "CNN's 'Holograms' Aren't Holograms, So Cut It Out," *Gearlog: A Gadget Guide By Geeks, For Geeks*, Nov. 5, 2008, http://www.gearlog.com/2008/11/cnns_holograms_arent_holograms.php; and Peter Nowak, "CNN's Holograms Not Really Holograms," CBC News, Nov. 6, 2008, http://www.cbc.ca/technology/story/2008/11/05/tech-holograms.html. The CBS article included this report from an expert: "'They were quite sophisticated, no doubt,' said Hans Jürgen Kreuzer, a professor of theoretical physics at Dalhousie University and an expert on holography who watched the 3-D interviews. 'But I immediately said to my wife that I don't think it has anything to do with holograms.' "

news. One writing for the *Dallas Morning News* Web site – in a news form relatively

new in election-night history, the blog – said this ahead of time about the CNN plan:

"The technology sounds undeniably cool … but I have no idea how this will make

CNN's election coverage any better… CNN is clearly determined to be the pioneer of

extravagant, dubiously-useful election technology."[31] The next day, he deemed the

whole affair "dumber than I thought."[32] A writer for *The Guardian's* Web site was

equally dismissive: "This was one of the most gleefully pointless election-night

gimmicks of them all."[33] The *Washington Post's* Tom Shales, one of the leading

American television critics, was also underwhelmed. "It was a cute trick," he wrote, "but

how did it substantially contribute to the coverage? No one seemed to know."[34] Here

were shades of Jack Gould, perhaps, dismissing computers in 1952 as inconsequential

additions to the CBS and NBC election-night coverage.

 As for the question of whether holograms might have any redeeming journalistic

value, CNN returned the day after the election with an iteration of what I have been

calling in this dissertation the "story of the story." [35] Blitzer boasted that CNN's use of

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[31] Victor Godinez, "CNN Will Use Holograms to Display Election Analysts On Location With Obama and McCain Inside the CNN Studio," Technology Blog, *Dallas Morning News*, Nov. 4, 2008, http://techblog.dallasnews.com/archives/2008/11/cnn-will-use-holograms-to-disp.html.

[32] Victor Godinez, "The CNN Election Coverage 'Hologram' Wasn't Even A Real Hologram," Technology Blog, *Dallas Morning News*, Nov. 5, 2008, http://techblog.dallasnews.com/archives/2008/11/the-cnn-election-coverage-holo.html.

[33] Anna Pickard, "Who Needs An Election When You Have Holgrams," *The Guardian*, Nov. 5, 2008, http://www.guardian.co.uk/world/2008/nov/05/uselections2008-barackobama8.

[34] Tom Shales, "After a Night of Illusions, Television Records Reality," *Washington Post*, Nov. 5, 2008, C1.

[35] "Challenges Facing Obama; Palin Answers Criticism; Races Still Too Close to Call; What Do Republicans Do Now?; Obama's Top Secret Intelligence Briefing," The Situation Room, CNN, Nov. 5, 2008, 5 p.m. segment, transcript available via LexisNexis. A video of part of this CNN report on its own coverage is available on YouTube as "CNN 'Hologram' Interview Explained?" at

"holographic interviews" was "one of the most talked about issues online" and introduced a reporter who covers the Internet for CNN, Abbi Tatton.[36] Tatton turned to a giant screen showing Google's "Hot Videos" page and noted that after the most-watched recording – President-elect Obama's acceptance speech – the next in popularity was a clip of Yellin being beamed into the CNN studio, viewed hundreds of thousands of times. Tatton recited with excitement some of the buzz from blogs and news sites – though not any of the unflattering critiques. Then Wolf Blitzer turned to David Bohrman, CNN senior vice president and Washington bureau chief. Blitzer began with a nod to the standard measure of television's election night success, congratulating Bohrman for CNN's election-night ratings.[37] Bohrman reported working for years on the high-tech concept that played out on election night. The plan had moved into high gear about three months before the election, and in the fall he made a quick trip to Israel to see a proof of concept for the technology. Yet even with all the preparations, he said, he didn't know whether it was going to work on election night. After Bohrman described the process and showed behind-the-scenes images, Blitzer asked him whether they had "a future in this hologram business?"[38] Bohrman said it had been "a little ornament on the tree" in covering the events of election night. But as television might evolve in the future –

http://www.youtube.com/watch?v=FD2362cHM_U. The video is quoted here where there are minor discrepancies with the transcript.

[36] "Challenges Facing Obama...," transcript, CNN; and "CNN 'Hologram' Interview Explained," CNN video on YouTube.

[37] CNN scored the highest ratings among both cable and network television operations, with an average audience of 13.3 viewers between 8 p.m. and 12:30 a.m.; the top network was ABC with 12.5 million viewers; David Zurawik, "CNN Wins Big, While MSNBC Loses in Election Coverage," Z on TV blog, *Baltimore Sun*, Nov. 6, 2008, http://weblogs.baltimoresun.com/entertainment/zontv/2008/11/.

[38] "Challenges Facing Obama...," transcript, CNN; and "CNN 'Hologram' Interview Explained," CNN video on YouTube.

maybe "five or 10 or 20 years down the road" – Bohrman suggested that this technology

might serve television news by allowing for more "intimate" possibilities in interviews at

a distance.[39]

Meanwhile, the technology companies behind the CNN episode were touting their

role in their own online promotional material – and later at a major broadcasting trade

show in Las Vegas.[40] And that future mentioned by Bohrman might not be so far away:

Less than a year later, in August 2009, ESPN, the sports cable network, revealed at a live

demonstration for the news media that its staff had been working "feverishly" on

hologram technology to enhance its reportage of sporting events – to "bring the people

from the field in and bring the people from the studio out to the event."[41]

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[39] "Challenges Facing Obama...," transcript, CNN; and "CNN 'Hologram' Interview Explained," CNN video on YouTube.

[40] See: "Vizrt and CNN's 'Hologram' – Behind the Scene," press release, Vizrt.com, Nov. 6, 2008, http://www.vizrt.com/news/press_releases/article3918.ece; and "VirtualVu – The CNN Hologram," STATS, http://www.stats.com/VirtualVU-Case-Study.pdf. There have also been discussions of the technology in the technical media. See, for example: "Vizrt and CNN's 'Hologram,'" AV Technology, Nov. 21, 2008, http://www.avtechnologyonline.com/article/27222.aspx; and Debra Kaufman, "Pushing for Computer Graphics' Far Edge," TVNewsCheck, March 12, 2009, http://www.tvnewscheck.com/articles/2009/03/12/daily.4/?print. For an account of the technologists touting of their election-night work for CNN at the 2009 trade show of the National Association of Broadcasters, see Carolyn Braff, "Vizrt, STATS Bring the CNN Hologram to NAB Floor," Sports Video Group, April 22, 2009, http://sportsvideo.org/main/blog/2009/04/22/vizrt-stats-bring-the-cnn-hologram-to-nab-floor/.

[41] For an account of the demonstrations and ESPN's plans for using the new technology, see Glen Dickson, "ESPN Shows Hologram Technology," *Broadcasting & Cable*, Aug. 27, 2009, http://www.broadcastingcable.com/article/329132-ESPN_Shows_Hologram_Technology.php. A clip of the hologram in action is online at: http://www.broadcastingcable.com/video/WEB_VIDEO/2925-ESPN_Gets_Holographic.php. The August 2009 ESPN announcement included a promise to employ the technology on air in 2010. Veteran anchor Chris Berman and Chuck Pagano, the executive vice president for technology, sat together in a room chatting, each dressed in khaki slacks, dark blazers, and open-necked shirts. Then like something out of *Star Trek*, a blur appeared between then and turned into a life-like apparition – Bob Ley, another veteran anchor, similarly attired. He joined in the conversation, gesturing and addressing the men to his right and his left as if he were there. And they reciprocated. "It's scary realistic, isn't it?" said the beamed-in commentator. Berman, briefly sounding the Luddite, confessed to being less than a complete fan of some of the high-tech wizardry employed in the network's pre-game shows during football season. But this new development, he said, shaking his head and casting around for his words, "that's really pretty interesting… Forty years after man landed on the moon, Chuck, you perfected this pretty good."

Logistical Challenges and the Locus of Innovation

I do not mean to suggest here that nothing has changed since 1952, or 1852. Certainly, computers became integral components not only of election night's showmanship but of its journalism. And computer analysis did come to have a place in the newsroom, slowly, for other stories. In some cases, this came through continued mining of voting data after an election was over. In 1962, for example, the *New York Times* used a combination of computer-generated election-night data and demographic data for stories written over several days on the meaning of the vote.[42] Several pioneering projects in the late 1960s and early 1970s dealt with hot-button issues of race and crime: a survey to help understand the 1967 riots in Detroit; a study of courts and crime in Miami; an exploration of criminal activity and police effectiveness in various parts of New York City; revelations of discrimination in Philadelphia's criminal justice system; and an expose of heroin trafficking in Delaware.[43] There were efforts to spread the word and to provide means for journalists to support each other in making a place for computer analysis in the newsroom. During and after the 1970s, Philip Meyer, the reporter who led

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[42] Leo Egan, "Lefkowitz Victor; Governor's Margin is Narrowed by Vote for Conservative," *New York Times,* Nov. 7, 1962, 1, 16; Clayton Knowles, "Javits Leads G.O.P. Slate; Plurality Nearly a Million," *New York Times*, Nov. 7, 1962, 1, 17; Leo Egan, "Rockefeller Edge Spurs '64 Hopes," *New York Times*, Nov. 8, 1962, 1, 23; Leo Egan, "Ethnic Divisions in Vote Analyzed," *New York Times*, Nov. 14, 1962, 32.

[43] For details on the conduct of these projects and their methodologies, see, for example: Philip Meyer, "The People Beyond 12th Street – Part I: The Rioter – And What Sets Him Apart," *Detroit Free Press*, Aug. 20, 1967, p. 1B ff; Clarence Jones, "A Scientific Look at Dade Crime," series, *Miami Herald*, Dec. 15-22, 1968; Maier, "The Digital Watchdog's First Byte," 75-91; David Burnham, "A Wide Disparity Is Found in Crime Throughout City," *New York Times*, Feb. 14, 1972, 1; David Burnham, "Police Efficiency Constant All Over City, Study Finds," *New York Times*, Feb. 15, 1972, 1; Donald L. Barlett and James B. Steele, "Crime and Injustice," newspaper series reprint, Philadelphia Inquirer, 1973 (in the possession of the author); Meyer, *Precision Journalism*, 2nd ed., 366-376; DeFleur, *Computer-Assisted Investigative Reporting*, 74-76; Donald L. Barlett and James B. Steele, "So Much for the Glamorous Life of an Investigative Reporter," *The Quill* 65, no. 3 (March 1977), 18-22; Leslie E. Cansler Jr., "How *Wilmington Journal* Probed the Drug Problem," *Editor & Publisher* 105, no. 48 (Nov. 25, 1972), 14, 32.

the initiative for 1967 computer-aided survey analysis in Detroit and later worked on
other projects, became an advocate for "precision journalism" – the application of
empirical social science methods to journalism, including computer analysis.[44] During
and after the 1980s, Elliot Jaspin became a leading advocate for what he named
"computer-assisted reporting," which he had practiced at the *Providence Journal* and
then went on teach at a center he was instrumental in creating at the University of
Missouri.[45] In turn, that center, now known as the National Institute for Computer-
Assisted Reporting, has served over the past two decades as hub for the mutual support of
journalists interested in these practices.

The increase of computer analysis in newsrooms beyond election night
applications certainly coincided with the diffusion of different sorts of computers than
those available in 1952, including computers and expertise acquired by news
organizations for other day-to-day business and production tasks, and, eventually the
installation of personal computers at reporters' and editors' desks.[46] The spread of
computer analysis also certainly coincided with governments' increasing computerization

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[44] Philip Meyer's advocacy included the 1973 publication of *Precision Journalism: A Reporter's Introduction to Social Science Methods* (Bloomington, Ind.: Indiana University Press) and subsequent editions.

[45] See, for example: Elliot Jaspin, "Computer = Reporting Tool," in *The Computer Connection* (Syracuse: S.I. Newhouse School of Public Communications, Syracuse University, 1989), 18-24; Elliot Jaspin, "Perspectives on How Computers Change Journalism," *IRE Journal* 17, no. 1 (January-February 1994), 13-15; Elliot Jaspin, "The New Investigative Journalism: Exploring Public Records by Computer," in *Demystifying Media Technology: Readings From the Freedom Forum Center*, John V. Pavlik and Everette E. Dennis, editors (Mountain View, Calif.: Mayfield Publishing Company, 1993), 142-49; Elliot Jaspin, *NineTrack Express*, Version 2.0 (Columbia, Mo.: The Reporters' Software Project, 1990); Elliot Jaspin and Maria Miro Johnson, "R.I. System Fails to Fully Check Driving Records of Bus Applicants," *Providence Journal*, May 11, 1986, 1.

[46] A detailed history of the early diffusion of computer analysis in journalism, the reporting projects that were produced, and the dynamics involved is a subject worthy of much more exploration than it has received to date. A useful overview is provided by De Fleur, *Computer-Assisted Investigative Reporting* (pp. 1-95), along with an analysis of techniques of used in 130 contemporary computer-assisted stories (pp. 96-111).

of public records – the bread and butter of computer-assisted reporting. And all of this came at a time when the circulation of print media was facing increasing competition from broadcast and then cable television, providing fertile ground for experiments of all sorts.[47]

The wider use of easier-to-operate computer technology, the greater availability of digital data, and other contingencies of the latter years of the 20th century raise a question to which I alluded at the start of this dissertation. Could the limited number of instances of journalistic computer-use beyond election night for so many years immediately after 1952 have been otherwise? Was it merely the logistical and technological challenges associated with computing that explain in large part this very limited use for so long? Before undertaking this study, I assumed this was the case. Now I am suspicious of that assumption. For one thing, the use of computers for analysis of election results in 1952 and thereafter involved marshalling an extraordinary array of resources to gather and process the vote in real time under extremely tight deadlines. The technical and logistical challenges *could* be overcome – as could the challenges of bringing a new technology into a field not universally inclined to see it as appropriate. Another way of thinking about the question is to look at what was going on in other areas of endeavor. To do that in a rigorous way is beyond the scope of this dissertation. But it is worth pausing here to consider some intriguing juxtapositions and unlikely applications.

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[47] The subject of experimentation with new approaches to journalism, including computer analysis, is explored, for example, in: Everette E. Dennis, ed., *The Magic Writing Machine: Student Probes of the New Journalism* (Eugene, Ore.: University of Oregon School of Journalism, 1971), including the chapter "Precision Journalism," by Neil Felgenhauer, 65-75. For a study of the role of the diffusion of television in the operations of existing media, see Baughman, *The Republic of Mass Culture*, 3rd. ed.

In 1964, Prentice-Hall published *Depth Reporting: An Approach to Journalism.*

The author, Neale Copple, a former journalist and Pulitzer-Prize nominee, was an

associate professor of journalism and would soon go on to head the journalism program

at the University of Nebraska. Arguing that beneath-the-surface reporting got more lip

service than application, Copple urged reporters to dig into the events and institutions

they were covering. He also urged them to learn something about computers, but not

because of any perceived usefulness for computers in depth reporting. He deemed that a

remote possibility. Rather, he argued that journalists should know about computers

because computers were changing the world around them. A dozen years after the 1952

election, here was the author of a textbook about empirical journalism still not seeing

much use for computers in journalism beyond election night. He even reveled in standing

apart from this tool as one applicable to his field. On the one hand, he noted that

television had done a better job than newspapers at dispelling the "modern myth" that the

computer "is an awesome, almost mystical modern monster," and he cited the computer's

use on television for "such special occasions as national elections." [48] But he also noted

that "the infernal machine has misinterpreted a time or two, which delighted those of us

not ready for the wheel…"[49]

While Copple was not pushing computers for the kind of in-depth reporting he

was advocating, computers by then had already found a home across a wide swath of

American life. Three years earlier, in 1961, the periodical *Computers and Automation*

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[48] Neale Copple, assisted by Emily E. Trickey, backed by the Newspaper Fund, Inc., of *The Wall Street Journal, Depth Reporting; An Approach to Journalism* (Englewood Cliffs, N.J.: Prentice-Hall, 1964), 244.

[49] Ibid.

had published a list of more than 500 areas of application for computers.[50] Election return

analysis was one of them, as were applications in fields populated by professionals who

might have been as protective of their analytical turf as journalists – those engaged in

medical diagnosis, legal analysis, and information retrieval, an activity in which the

perceived competition between humans and computers had been highlighted by a 1957

movie, the comedy *Desk Set.[51]*

Analysis of documents was another such area of knowledge work not so far afield

from some journalistic activities. Perhaps one of the more surprising juxtapositions of the

1950s was that of computing and Bible studies. In 1956, *Popular Science* reported on the

use of a UNIVAC to produce a concordance of the Bible – a list of each key word, its

location (by book, chapter, and verse), and the phrase or phrases in which it appeared.

The article ran under this attention-getting teaser: "Teaching their giant electronic moron

a special numbers game, engineers beat the time of scholars by more than 20 years." [52]

Popular Science noted that the idea had come from a divinity student at Harvard, who,

after watching scholars try to sort and compare Biblical words by hand, wrote a letter to

Remington Rand, setting in motion a project that took months of work to complete.

Published the next year by Thomas Nelson and Sons, the concordance drew this praise

from a reviewer in the *Journal of Bible and Religion*: Despite a few minor omissions,

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[50] The list appearing in *Computers and Automation* 10, no. 6 (June 1961), was reprinted by the magazine's editor, in Edmund C. Berkeley, as Appendix 1, "Over 500 Areas of Application of Computers," in *The Computer Revolution* (Garden City, N.Y.: Doubleday& Company, 1962), 195-202.

[51] Walter Lang, dir., and Henry Ephron, prod., *Desk Set,* movie, (Twentieth Century Fox Film Corporation, 1957).

[52] Gardner Soule, "The Machine that Indexed the Bible, " *Popular Science* 169, no. 5 (November 1956), 173.

"Biblical scholarship has reason to be grateful to Mr. Ellison, the technicians at

Remington Rand, Inc., and the publishers for this handsome volume."[53]

Football offered another example of computers turning up outside the more likely

domains of business, science, and engineering. In 1959, *The New York Times* reported on

innovative uses of technology being put to work to analyze and direct the game, starting

in the professional teams and filtering down to colleges and even high schools.[54] These

technologies included "picture-in-a-minute" Polaroid cameras, closed-circuit television,

helmets with radio receivers – and computers:

> At Princeton and Rutgers, the clatter of electronic computers is as much a sound of football as the thud of cleat against pigskin. At each game, statisticians in the grandstand make play-by-play notations which the coaches later correlate with movies of the game. The results are fed into a computer, and out comes a thirty-seven-page statistical abstract of the game which the coaches peruse before planning next Saturday's campaign.[55]

Beyond the hardware and programs, the integration of computers and football extended

even into the sport's rich metaphorical terrain. With strategy grown more complex and

the playbook more voluminous, Weeb Ewbank, in the midst of his second championship

season in a row coaching the Baltimore Colts, referred to his equally legendary

quarterback, Johnny Unitas, as "my crewcut little I.B.M. machine," meant to be a

compliment.[56]

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[53] F. Wilbur Gingrich, review of *Nelson's Complete Concordance of the Revised Standard Version Bible*, compiled under the supervision of John W. Ellison, *Journal of Bible and Religion* 25, no. 4 (Oct., 1957), 347-348.

[54] Arturo F. Gonzalez, Jr., "Today's Football: Block that Photograph," *New York Times*, Nov. 22, 1959, Sunday magazine, 62ff.

[55] Ibid.

[56] Ibid.

Venturing even farther into the most unlikely of places – certainly not included in Eckert and Mauchly's 1946 list of potential applications – computers appeared at the intersection of romance and show business as early as 1956. That fall, Art Linkletter, the stunt-loving host of a popular television show, *People are Funny*, reportedly read that millions of people belonged to "lonely-hearts clubs."[57] He ran newspaper ads seeking adults looking for mates, got thousands of replies, called upon an expert in family relations to draw up a questionnaire, and enlisted Remington Rand and one of its UNIVAC computers to work through the answers. The end result played out on Linkletter's show as a 28-year-old man who worked in advertising and a 23-year-old receptionist were introduced, hit it off, and announced their engagement within weeks, during which they appeared on the show several more times. The staff at *Time* magazine couldn't resist a dig in an article that ran shortly after the fall elections, declaring UNIVAC "a better matchmaker than oddsmaker," with the stunt "a clear-cut victory for Univac, hormones and Trendex," a reference to the show's ratings.[58] Linkletter promised the couple a honeymoon in Paris, but this was not to be. They broke off their engagement, were later reported to be attempting a reunion – heralded in an Associated Press item that ran on the front page of at least one newspaper – and finally split for good. One response appeared in a light-hearted editorial in an Indiana newspaper. It poked fun at the computer's lack of "complete infallibility," adding that among the morals of the story, "Univac has learned to stick to easy simple things like predicting

[57] "Electronic Cupid," *Time*, Nov. 19, 1956. Other sources for this account include "Electronic Engagement," *San Mateo (Calif.) Times*, Nov. 24, 1956; Associated Press, "Univac-Selected Pair To Try To Go It Again," *Frederick (Md.) News*, May 9, 1957, p.1; "Univac Love Short-Lived," editorial, *Hammond (Ind.) Times*, Aug. 1, 1957, B-2; David Shaw, "Love: A Many Spindled Thing?" *Long Beach (Calif.) Independent*, May 17, 1967, B-1, 4.

[58] "Electronic Cupid," *Time*, Nov. 19, 1956.

elections."[59] Still, computers did not disappear from the realm of romance, though they

were not universally applauded in that role. By the mid 1960s, there were reports of

dozens of "computer courtship services," according to one newspaper account, despite

the warnings of "social commentators who fear the transmutation of the human race by

the machine – specifically the computer."[60]

These examples of early computer use overcame the logistical obstacles of the era

with sufficient organizational interest, leading here to an observation about an important

aspect of election night 1952 that might be easily overlooked – and might provide us with

a tool for thinking about subsequent applications of computers in the newsroom. When

computers arrived on the scene in the early 1950s, they did not have an automatic

trajectory into the newsroom. They did, however, offer a choice. But to act on that

choice required what might be called "buy-in" from a whole host of actors, ranging from

key figures in the chain of command to those at lower levels who would be involved in

carrying out the work. Such buy-in, in the case of elections, was facilitated by the

opportunity to address a matter of great public interest, which, in turn, promised

"eyeballs," to use the current phrase. And it might not be a coincidence that beyond

elections, the hot-button issues of race and crime provided subjects for a number of

important early stories built on computer analysis. When desktop computers arrived in

the newsroom, their availability also did not automatically ensure that journalists would

use them in analytical ways for reporting. But what this modification, simplification, and

spread of computing technology over time did make possible was opportunity, a chance

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[59] "Univac Love Short-Lived," editorial, *Hammond (Ind.) Times*, Aug. 1, 1957, B-2.

[60] David Shaw, "Love: A Many Spindled Thing?" *Long Beach (Calif.) Independent*, May 17, 1967, B-1, 4.

for reporters who were so inclined to experiment, to go out and learn what they needed to know in order to do this work themselves. Like-minded journalists also organized themselves beyond company lines to form national trade organizations for mutual support, the most enduring of these being Investigative Reporters and Editors and its affiliate, the National Institute for Computer-Assisted Reporting. It was not merely that changes in computers had made new iterations of this technology cheaper and more accessible and easier to use, but that those things had allowed for levels of experimentation which did not require buy-in from the top levels of a news organization and from across boundaries to the inventors and purveyors of computing technology.

    To bring this dissertation back to a point raised at the outset – the tendency of the arrival of computing in journalism to be portrayed as revolutionary by some and yet to be greeted by others with skepticism about its utility for news reporting and analysis – I have emphasized the importance of what I have called cultural continuity in both of these responses. I have suggested that this innovation could be entertained as a change in the election-night mix precisely because that change could be built on a solid base of cultural continuity. Here was new technology extending existing practices and values in election-night journalism.

    This concept runs counter to one common way of talking about new technology that was discussed in Chapter 1 – that new technology arrives as a juggernaut which rolls through our lives and changes everything in its path, demanding that we conform. Extant practices and values are also powerful and must not be forgotten in understanding the trajectory of new technology. That concept as explored in this dissertation is consistent

517

with findings from studies of other arenas for new technology, including the telephone, machine-like musical instruments, and newspapers' early experiments with online editions. In his study of the diffusion of the telephone up to 1940, Claude Fischer found that this modern technology did not lead to alienation and the breakdown of relationships.[61] Rather, groups that the technology's promoters had originally overlooked or dismissed – including women and farm families – sought out telephone service to reinforce social relationships. "We might consider a technology, such as the telephone, not as a force impelling 'modernity,' " he concluded, "but as a tool modern people have used to various ends, including perhaps the maintenance, even enhancement, of past practices."[62] In a study of the reception of new technology in music, from player pianos to synthesizers, Trevor Pinch and Karin Bijsterveld concluded by remarking on "the presence of stability in the midst of change." [63] This includes the continuing importance of personal achievement and virtuosity in composition and live performance even with the arrival of machine-like instruments. "New instruments are important, because they allow people to do new things in new ways," wrote Pinch and Bijsterveld.[64] "But acceptance seems to depend on an alignment between old values and new practices. Old norms and values, it seems, die hard."[65] These findings resonate, too, with Pablo Boczkowski's study of innovation in online newspapers. Rather than focus, as is commonly done, on revolutionary effects of new technology in journalism, he suggested

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[61] Claude S. Fischer, *America Calling: A Social History of the Telephone to 1940* (Berkeley: University of California Press, 1992).

[62] Fischer, *America Calling*, 272.

[63] Trevor J. Pinch and Karin Bijsterveld, "'Should One Applaud?' Breaches and Boundaries in the Reception of New Technology in Music," *Technology & Culture* 44, July 2003, 558.

[64] Ibid., 559.

[65] Ibid.

that what are often overlooked are "the more evolutionary ways in which people often incorporate new artifacts in their lives." [66] The appearance of the new media he studied was characterized, he wrote, by the "merging of existing social and material infrastructures with novel technical capabilities."[67]

In the end, election night, too, is a place of intersections. There are intersecting interests in the outcome – the voting public is interested, of course, but there are others, from bookies interested in profits to scholars interested in the adequacy of their statistical modeling. And there are intersecting interests in getting the job done and getting attention, as we have seen in the alliances of journalists and technologists. This is evidence of what can happen – resistance that can be overcome and experiments in change that can be made consistent with existing values – when conditions prompt collaborations in unexpected ways and by unexpected allies. Today, purveyors of news are trying to maintain their standing with the news-consuming public even as new players scramble for a foothold in a media landscape full of novel gadgets and applications. The lessons of 1952 are worth bearing in mind. Here was neither necessity as the mother of invention nor invention as the mother of necessity. Rather, the computer, a new technology developed with one set of uses in mind, was tried out by journalists not to make radical changes in election night, but to help achieve the varied goals of election-night journalism, from gathering the news to attracting an audience.

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[66] Boczkowski, *Digitizing the News, 2.*

[67] Ibid., 4. A relevant study of Israeli newspaper reporters in 1981 and 2001 also stresses the importance of continuity in reporting practices even after the arrival of new technologies of communication (pager, facsimile machine, mobile telephone, Web and e-mail) in addition to land-line telephone: "Reporters adhere to old communication channels and use the new ones in an adaptive rather than a transformative manner." Zvi Reich, "New Technologies, Old Practices: The Conservative Revolution in Communication between Reporters and News Sources in the Israeli Press," *Journalism & Mass Communication Quarterly* 82, no. 3 (Autumn 2005): 552-570.

This case study has chronicled the circumstances under which a new technology was employed by a relatively new form of the news media. On election night 1952, the computer was deployed not so much to revolutionize news reporting as to capture public attention. It functioned in line with existing values and practices of election-night news reporting. In this important instance, therefore, the new technology's technical features were less a driving force for adoption than its usefulness as a wonder and as a symbol to enhance the prestige of its adopters. This suggests that a new technology's capacity to provide both technical and symbolic social utility can be key to its chances for adoption by the news media.

On one level, the appearance and operations of election night would change over time, even as the computer itself would go from being a curiosity to a necessity. But on another level, the election-night engagement with computers has been consistent with old aspirations – the desire to be seen as the first to tell an important story, the desire to be seen as the first with something new. We should not be too surprised at this application of new technology to old aspirations. Long before the personal home page, Americans kept scrapbooks that they circulated among family and friends.[68] The telephone became a new means to an ancient end, socializing.[69] Before ubiquitous, Internet-enabled, news-disseminating devices, there was portable radio. And before the online free-for-all in which it is said that anyone can now be a journalist, there were successive waves of other radio technologies and systems – wireless, shortwave, and Citizen's Band among them – that allowed the spread of information and opinion by "amateurs" without the mediation

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[68] Ellen Gruber Garvey, "Scissorizing and Scrapbooks: Nineteenth-Century Reading, Remaking, and Recirculating," in *New Media, 1740-1915*, edited by Lisa Gitelman and Geoffrey B. Pingree, (Cambridge, Mass.: The MIT Press, 2003), 207-227.

[69] Explored in Fischer, *America Calling*. as previously noted.

of news organizations. If we are inclined to think that everything changes when an innovation comes along at the intersection of news, technology, and culture, we run the risk of misunderstanding what is changing – and what is not.

Epilogue

Forty eight years after election night 1952, and just two years before the subject of this dissertation first grabbed my attention, William Burkhart, the inventor who played a pivotal role in the development of the Monrobot, passed away after a long illness. Before he passed away, he had been drafting a series of autobiographical sketches. He talked about his childhood, his war years, his business endeavors, and his personal philosophy. I had a chance to see these writings when I flew across country to meet his wife, Dorothy, and examine her husband's papers. I was eager to know what he might have said in them about that election night in 1952. But nowhere was it mentioned. The only related artifact among his files was a *Newsweek* magazine from November 1952. It included an article citing him and noting his role in connection with the Monrobot used on NBC.[70] I wondered whether he had realized back in 1952 that he was doing something of historic significance. I talked this over with Dorothy, and she suggested that before I return home, I pay a visit to Monroe and Frederica Postman.[71] They had been friends of the Burkharts since the 1950s, and the two men had worked together. Perhaps the Postmans could help me learn more about how Burkhart saw his involvement with election-night forecasting for NBC in 1952. They lived nearby, and I stopped in to see

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[70] "The Machine Vote," *Newsweek*, Nov. 17, 1952, 63-64.

[71] Dorothy Burkhart, interview by the author, Los Altos, Calif., Jan. 14-15, 2005.

them: a lively, sharp, and active couple. Monroe Postman had come to work with Bill

Burkhart at the Monroe Calculating Machine Company in New Jersey in 1954. I was

hopeful for what the couple might remember of what Burkhart might have told them

about election night 1952. I asked, but my question was met by puzzled silence. I

showed them photographs. They were astonished. Their reaction spoke volumes. They

had no recollection of Burkhart ever talking about the events of that night.[72] Burkhart

had taken part in a sentinel and seminal episode at the dawn of the computer age, but its

significance, perhaps, was not something he could see in real time.

I was saddened that I had missed by just a few years the chance to talk with him.

But one of the real pleasures of this project was getting to meet and hear about

individuals who are not common names in the history books of journalism or technology

but played important roles in the events I have described. One of these was Max

Woodbury, the mathematician who worked out the election-night formulas for the

UNIVAC in 1952. I got to spend a pleasant day with him in Birmingham, Alabama.[73]

Another was Stephen Wright, the engineer overseeing a team that converted Woodbury's

ideas into a program that would process the data as it came in on election night and

generate forecasts. He graciously allowed me to spend a day with him at his home outside

Philadelphia.[74] Several months later, he sent me an announcement by e-mail.[75] There

was to be a ceremony dedicating a historical marker in front of 3747 Ridge Avenue in

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[72] Monroe and Frederica Postman, interview by the author, Los Altos, Calif., Jan. 15, 2005.

[73] Max A. Woodbury, interview by the author, Birmingham, Ala., Sept. 30, 2004.

[74] Stephen E. Wright, interview by the author, Doylestown, Pa., April 10, 2006.

[75] Stephen E. Wright, e-mail to the author, Sept. 6, 2006.

Philadelphia, the site of the former Eckert-Mauchly plant and a landmark of the early computer age.

When I arrived on the appointed day in the early fall of 2006, a large canvass tent had been set up in a lot adjacent to the building. About 150 people had gathered, including Woodbury, who traveled from Alabama for the event. The "pioneers," men and women who had worked with Eckert and Mauchly, wore name tags noting their roles. After the ceremony began, one of the speakers asked these pioneers to stand. Dozens rose to their feet, some more slowly than others, and they received a hearty ovation. Letters were read – among them messages from Sen. Arlen Specter and Gov. Ed Rendell. And there were speeches, including one by Wright. He began by quoting two lines from William Wordsworth's poem about the French Revolution:

> Bliss was it in that dawn to be alive,
> But to be young was very heaven! [76]

"To those of us who were here at the dawn of the computer revolution," Wright explained, those words recall "the enthusiasm with which we took part in it. We came to work each day with a sense of joy in exploring the challenges of this undiscovered world."[77] He talked about the preparations for that election night in 1952. His engaging account was met with laughs and knowing nods – and, as I scanned the faces of the audience, admiration. Wright said that after that first contest between Eisenhower and Stevenson, he continued to work on election-night computing projects through 1964.

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[76] William Wordsworth, from "The French Revolution, as It Appeared to Enthusiasts at Its Commencement," cited by Stephen E. Wright, speech, historical marker dedication ceremony attended by the author, Philadelphia, Pa., Sept. 28, 2006. Wright also provided the author with a copy of his prepared remarks. There is also a video recording of the ceremony: "Dedication of the Pennsylvania Historic Marker BINAC and UNIVAC," DVD, Philadelphia, Sept. 28, 2006, Explorations Unlimited LLC, Elkins Park, Pa.

[77] Wright, speech, Sept. 28, 2006.

"But," he added, "I don't think anything will ever match the thrill of that night in 1952."[78]

[78] Ibid.

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CBI: Charles Babbage Institute, University of Minnesota, Minneapolis, Minn.

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CBS-NA: CBS News Archives, New York, N.Y.

CHM: Computer History Museum, Mountain View, Calif.

DB-CAH: Dolph Briscoe Center for American History, University of Texas at Austin.

HML: Hagley Museum and Library, Wilmington, Del.

IBM-CA: IBM Corporate Archives, Somers, N.Y.

JHU-EL: Johns Hopkins University, Milton S. Eisenhower Library, Baltimore, Md.

LAB: Library of American Broadcasting, University of Maryland, College Park, Md.

LOC: Library of Congress, Washington, D.C.

MSB: Monroe Systems for Business, Levittown, Pa.

NBC-NA: NBC News Archives, New York, N.Y.

NMAH: National Museum of American History, Washington, D.C.

NYPL: New York Public Library.

PCM: Paley Center for Media, New York, N.Y.

UP-RBML: University of Pennsylvania, Annenberg Rare Book and Manuscript Library, Philadelphia, Pa.

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