ABSTRACT

Title of Document: THE IMPACT OF HIGHER EDUCATION ON POLICE OFFICER ATTITUDES REGARDING ABUSE OF AUTHORITY

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This study examines whether officers who receive a college education (four-year degree) prior to entry into the police service have attitudes that are less supportive of the abuse of police authority. This research also explores whether level of higher education and the timing of degree completion alter this potential attitudinal impact of a bachelor's degree. Using data from a nationally representative survey sample, I find that officers with a pre-service bachelor's degree hold attitudes that are less supportive of abuse of authority. These effects remain regardless of when officers receive their degree and across varying levels of higher education (i.e. associate's degree, attending some college). Postsecondary education does not have a statistically significant impact on officer ratings of the seriousness of hypothetical abuse of authority scenarios. These findings suggest that higher education has some beneficial impacts for policing, although these benefits are not only associated with completing a four-year degree.

THE IMPACT OF HIGHER EDUCATION ON POLICE OFFICER ATTITUDES REGARDING ABUSE OF AUTHORITY

By

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I: RESEARCH GOALS AND OBJECTIVES

Scholars have frequently emphasized education and the obtainment of a four-year college degree, in particular, as a means of improving police attitudes and performance (Roberg & Bonn, 2004). Unfortunately, empirical research on the impact of education has been limited, weak methodologically, and often contradictory. The Committee to Review Research on Police Policy and Practices (National Research Council, 2004: 141) found "the available evidence inadequate to make recommendations regarding the desirability of higher education for improving police practice." One area where research has been particularly limited and postsecondary education could have an impact is police abuse of authority. If a college education makes officers more receptive to serving the community, more ethical and moral, and more tolerant, as predicted (Carter & Sapp, 1990; Goldstein, 1977), then college-educated officers would be expected to be less supportive of the abuse of police authority and more supportive of following proper rules and regulations. This research will attempt to answer key research questions about the relationship between police officer level of education and attitudes and beliefs about police abuse of authority. First, does officer higher education have a differential impact on beliefs and attitudes regarding abuse of authority and abuse of force? Second, do these attitudes have an impact on predicted behaviors in hypothetical situations? For example, do officers with a higher level of education recognize questionable officer tactics described in scenarios as more serious situations that require intervention? Third, if higher education does have an impact on attitudes, does this impact only appear when an officer has acquired at least a bachelor's (four-year) degree. Fourth, if college education does have an impact on attitudes, does this impact only appear when an officer

obtains a bachelor's degree prior to hiring? Factors that may impact police use of force are important to consider. Worden (1996: 46) makes the point that even though police rarely abuse authority, deaths from commercial airline flights are equally infrequent. The rarity, however, does not mean that research should not examine how to make these incidents even more scarce.

To complete these objectives, this study uses data from a 1998 Police Foundation survey (Weisburd et al., 2001) to assess the impact a college education has on officer beliefs and attitudes regarding police use of force and abuse of authority. The data have the major advantage of being one of the few nationally representative samples of officers and the only to examine police use of authority. Although using excessive force is just one way police officers can abuse their authority, most of the questions asked of officers in this survey focus specifically on the use of physical force against suspects or other civilians. Thus, I use the terms "excessive use of force" and "abuse of authority" nearly interchangeably throughout the rest of this study, while recognizing that this study does not explicitly address all possible abuses of police authority. I will use multiple regression methods to examine two different outcomes. First, I will construct an authority scale that combines four factors to examine: whether officers with a pre-service four-year degree (or higher) are less supportive of 1) police abuse of authority, 2) the code of silence, 3) violating departmental rules, and 4) calls for reduced attention to police brutality. Second, I will analyze officer responses to hypothetical situations to determine whether these officers recognize abuse of authority scenarios as more serious situations that require intervention. Multiple individual level officer attributes (e.g. race,

gender, years of experience) and departmental level (size, location) controls will be included in the final model, in addition to an educational achievement indicator.

The next chapter reviews the literature related to education and police abuse of authority including a general description of police deviance, background information on college education and policing, and studies that have examined issues specifically related to the impact higher education has on use of force and abuse of authority. I then list the hypotheses of the present study. The third chapter describes the dataset used for analysis, includes a description of the independent, dependent, and control variables, and outlines the statistical methodology for analysis. In chapter four, I present the results of the analyses. Chapter five includes a discussion of these results, implications of the findings, limitations of the study, and concluding remarks.

CHAPTER II: REVIEW OF RELEVANT LITERATURE

Police Abuse of Authority

Police deviant activity can take multiple forms. Barker and Carter (1994) separate police deviance into two subsections: occupational deviance, which includes corruption, sleeping on the job, and accepting bribes, and abuse of authority, the focus of the present study. Barker and Carter (1994: 7) define police abuse of authority as, "any action by a police officer without regard to motive, intent, or malice that tends to injure, insult, trespass upon human dignity, manifest feelings of inferiority, and/or violate an inherent legal right of a member of the police constituency in the course of performing 'police work.'" They divide abuse of authority into three distinct areas. First, officers can abuse their authority by using excessive force or engaging in brutality. Second, officers can discriminate or abuse their authority through verbal attacks. Finally, officers can engage in legal abuse by violating the constitutional rights of citizens. For example, an illegal search would constitute legal abuse. The ability to use coercive force is a distinguishing characteristic of the police (Klockars, 1985), which makes the study of how this force can be used improperly an important arena for research. The questions in the data used in this study pertain mostly to physical abuse and excessive use of force; thus, the focus of most of the subsequent research reviewed will be physical abuse of authority.

Researchers usually provide three different kinds of explanations for the causes of police use of force and abuse of authority: psychological, sociological, and organizational (Terrill, 2001; Worden & Catlin, 2002). Sociological explanations focus on situational factors that influence the decision to engage in force or abusive behavior,

organizational factors focus on police culture and departmental policies and administration, and psychological research focuses on officer characteristics and outlooks. Because the present study is focused on officer postsecondary educational attainment and attitudes, the psychological perspective is most relevant. The research specifically examining the impact of higher education on attitudes or behaviors related to the use of force will be detailed later in the chapter. First, it is necessary to explore theoretically why college education is expected to be important.

The Importance of College Education

In researching the impact higher education has on policing, this study first will explore the mechanism potentially linking college education to attitudinal change. Emile Durkheim's works are some of the most prominent for assessing the value of education. Durkheim (1956: 72) stressed that education is a necessity for promoting a moral society, and as he notes education "creates in man a new being." The educational process is not important just for the individual, but in essence, it allows society to continue, because students are taught to instill the culture and values of society. For Durkheim (1961), morality is composed of three elements: discipline, which consists of consistent conduct and responding to authority; attachment to the group, which implies actions are oriented towards the good of society; and autonomy, which suggests individuals must act with knowledge of the consequences of different actions. These aspects of morality are closely related to the issue in this study. If college education does instill morality, we would expect more educated officers to have attitudes supportive of consistently lawful conduct that does not violate departmental or legal standards. A moral education is particularly relevant to policing, because officers have a great deal of discretion that

forces them to act autonomously, but in ways that benefit and protect the general public. The broad nature of bachelor's degree programs should also be beneficial. Specialized, technical education, like the police academy, may not provide an individual the means to adequately deal with "human issues outside his professional pale" (Lear, 1961: 201). As Durkheim (1956: 137) notes in regards to proficiency in a specialized area, "the same mind may be free on one point, while on another it remains in servitude." A college education has the potential to free the entire mind, and thus produce police officers better able to deal with the various interpersonal situations that cannot be adequately covered in a training academy.

Durkheim's writing provides a theoretical base, but he was not writing specifically about a college education, so it is also important to consider theoretical and empirical research in the field of education to understand if and how a college education makes a difference. Pascarella and Terenzini (1991, 2005) have completed two extensive reviews of the higher education literature, focusing particularly on the impact of college. Their work guides this examination of the education literature. A lengthy review of the theories of educational change is beyond the scope of this study, but to generalize, developmental theories in education tend to focus on how change occurs and what changes are occurring as a result of the college experience (Pascarella & Terenzini, 2005). This theoretical framework sees college as a key stage in the development of the self and "several theories take the view that growth in self-awareness during the college years and the emergent understanding of an appreciation for the roles of other people and obligations to them are central features of development" (Pascarella & Terenzini, 2005: 48). Feldman and Newcomb (1994) echo this idea of a new conception of self, viewing

the college experience as a re-socialization process brought upon by the diversity of new ideas, new friends, and new beliefs that cause individuals to become more cognizant and concerned about the world around them. Thus, the college experience helps serve as a means of learning how to effectively interact with others.

Empirical assessments have found positive impacts of higher education that could be potentially related to less favorable attitudes towards abuse of authority for college-educated police officers. Research has found that attaining a college degree is associated with more humanistic values (Pascarella & Terenzini, 2005). These include more liberal attitudes towards ending inequality, greater political and social tolerance, and reductions in racial prejudice (Astin, 1977; Nichols, 1967). Acquiring a college degree is also associated with beliefs and behaviors related to morality. Pascarella and Terenzini (2005) conclude that college has a positive net impact on principled moral reasoning. Principled moral reasoning comes from the work of Kohlberg (1981, 1984), and is a three-level process. Individuals move from being pre-conventional and highly egocentric (Level I) to acting conventional and being concerned with following the rules to avoid punishment (Level II) to being postconventional and concerned with more universal conceptions of morality (Level III). Individuals at the postconventional state make an effort to avoid violating the rights of others and engage in principled moral reasoning. In their synthesis of the research of the 1990s, Pascarella and Terenzini (2005) find that senior undergraduates have a principled moral reasoning level that is 0.77 standard deviations (28 percentile points) higher than freshmen students. They conclude this change over the course of college is a move from conventional moral reasoning to principled moral reasoning (see also Trevino, 1992). These effects tend to remain in the

years following graduation, although recent longitudinal research is limited. Principled moral reasoning has also been linked positively to moral actions/behavior in areas such as workplace ethics (Arnold & Poneman, 1991), resistance to cheating (Cummings et al., 2001), and, importantly for policing, whistle blowing on corruption (Brabeck, 1984). Although principled moral reasoning is not the only link to principled moral action, these associations indicate that the change caused by college education should lead to more moral behavior. The exact reason why college leads to higher-level moral reasoning is not totally evident:

> Part of the explanation may be that college provides a relatively challenging and stimulating environment that leads students to overhaul and rethink the fundamental ways in which they form moral judgments. College may do this in large measure because it encourages students to think about the larger social contexts of history, institutions, and broad intellectual and cultural trends—many of which involve moral and ethical issues (Pascarella & Terenzini, 2005: 349; see also Rest 1994; Rest & Narvaez, 1991).

Thus, college could potentially impact abuse of authority behavior by instilling more tolerant attitudes and promoting moral behavior. Based on the work of Durkheim and theoretical and empirical research from studies of higher education, it seems very likely that college education has a real effect on individuals. Increased morality and a greater recognition of the rights of others would logically lead to police officers who abuse their authority less. Enhanced moral reasoning and behavior therefore serves as a potential mechanism linking college education and attitude change. Policing scholars have made similar arguments on why higher education could potentially improve policing, although as will be seen in the next section, these benefits were supported more by intuition than empirical knowledge.

College Education and Policing

Scholars have examined the impact that education has on police practice and performance for nearly 100 years (Finckenauer, 2005). August Vollmer, police chief in Berkeley, California from 1905 to 1932, became the foremost advocate of increased educational standards (Wilson, 1953). He believed that additional education would make officers more effective in serving the community, and he hoped that all police departments would require a bachelor's degree for police recruits (Carte & Carte, 1975). He noted in a letter that if this occurred, "Do you not believe that the entire [police] service in America would be measurably improved?" (Carte & Carte, 1975: 69). A college degree would most effectively allow officers to act independently to meet the array of needs in their beat. Since Vollmer expected all officers to be the "chief" of their beat, they needed to have the educational skills to serve the community (Carte & Carte, 1975). Several national panels echoed Vollmer's idea, beginning with the Wickersham Commission (1931). In their report on policing, which Vollmer largely wrote, they argued rampant misconduct in policing was largely a result of poorly educated and trained patrol officers and chiefs. The Commission report lamented the current state of police education, noting, for example, that over half of Los Angeles officers did not even have a high school diploma (Wickersham Commission, 1931). To follow through on these recommendations, Vollmer helped develop the first school of criminology at the University of California, he was a professor at the University of Chicago, and he influenced and encouraged nearly a dozen schools on the west coast to start teaching police and criminology courses (Wilson, 1953). Despite this push for increased education from Vollmer, most departments continued to use minimal educational requirements, rarely requiring more than a high school diploma (Paoline & Terrill, 2007).

The report of the President's Commission on Law Enforcement and Administration of Justice (1967: 279) even more explicitly called for increased standards for police officer education, making the recommendation that "the ultimate aim of all police departments should be that all personnel with general enforcement powers have baccalaureate degrees." Similar recommendations were made by the National Advisory Commission on Criminal Justice Standards and Goals (1973). As the Commission notes (1973: 327), "twenty years ago the high school diplomas was a significant educational achievement; it is not today. To continue recruiting at this level of education is to invite mediocrity; it may lead to the detrimental belief that almost anyone can be a policeman." The Commission argued that all police officers should have a college degree by 1982, and advanced graduate degrees should be required for those with command positions. Also in 1973, the American Bar Association's Advisory Committee on the Urban Police Function echoed Saunders' (1970: 82-83) reasons for supporting higher education for police:

> The qualities which law enforcement leaders claim to look for in recruits are the very ones which liberal education is believed to nurture: knowledge of changing social, economic, and political conditions; understanding of human behavior; and the ability to communicate; together with the assumption of certain moral values, habits of mind, and qualities of self-discipline which are important in sustaining a commitment to public service.

The conclusions of these national commissions were based on intuitive logic that college-educated officers would be better officers, but these reports cited little empirical evidence to show that a college education made a difference.

Despite the paucity of research findings, Congress even became involved in pushing for more educational opportunities for police officers through the creation of the Law Enforcement Education Program (LEEP) in 1968. LEEP provided grants for current officers to increase their education and loans for pre-service officers interested in

attending college (Carter & Sapp, 1990). However, Sherman and the National Advisory Commission on Higher Education for Police Officers (1978) expressed disappointment at the state of police education and found that LEEP funding was inadequate for a residential liberal arts college experience. Instead, police education at the collegiate level was too specialized and focused on police science courses vastly similar to the offerings at the police training academy. The number of police education programs skyrocketed after the creation of LEEP, because of the large supply of government funded students, but the Commission found that most of these programs had poor or non-existent faculty and were much more focused on vocational or industrial education than on a broad-based liberal arts curriculum. The Commission (1978: 190) also recommended moving from "educating the recruited" to "recruiting the educated." For education to have a positive impact on policing, they believed officers needed to enter the force with a pre-service baccalaureate degree.

LEEP was eventually phased out, and without federal funding, many low quality police education programs quickly closed down. (Roberg & Bonn, 2004). Since the 1960s and 1970s, there has been little emphasis on the national level on police educational standards. As a result, educational requirements for police have not increased dramatically in recent decades. The Bureau of Justice Statistics 2003 survey of police departments (Hickman & Reaves, 2006) indicates that the vast majority of departments still require only a high school diploma for applicants. Nine percent of departments require a two-year degree and one percent require a four-year degree. Larger departments are more likely to require some level of college with 18 percent of departments serving more than one million people requiring some college education. As

a result, nearly one third of officers work for a department with some college education requirement, a major increase from 10 percent in 1990. Despite this increase, a high school diploma remains the norm for education entry-level requirements in most departments.

In sum, advocates for higher educational standards for policing believe that increased education will in some way improve the performance and attitudes of officers. Education is supposed to add a humanistic element (i.e. a concern for human welfare) to policing (Carlan & Byxbe, 2000; Roberg & Bonn, 2004) that makes officers "appreciate the role of police in a democratic society" and "be more tolerant of people different from themselves" (Worden, 1990: 566). In particular, educated officers are expected to have a much stronger relationship with the community they serve (Carter & Sapp, 1990; Goldstein, 1977). It seems likely that more humanistic police officers would be less likely to hold attitudes supportive of abuse of authority. These intuitive arguments provided by policing scholars seem to be in line with the empirical research on college education and moral reasoning reviewed above.

College Education and Police Use of Force

Little research has directly examined whether officers with a higher level of education have different attitudes and engage in different behavior related to the use of force. There are some notable exceptions however. Two studies have used department records to examine the impact education has on use of force incidents. Sherman and Blumberg (1981) analyzed department records in Kansas City from 1972 to 1978 to determine if college education had an impact on how frequently officers fired their gun. They found that officers with a college degree did not differ from other officers in the

frequency of shooting their weapon in justified and non-justified situations. They note, however, that their study was limited by the rarity of older and more experienced college educated officers. Only six percent of officers in the department had a college degree in 1972, and there were only eight college-educated officers in the study with more than one year of experience. More recently, Williams and Hester (2004) examined the use of force records of 499 officers in the Polk County Sheriff's Department, again finding no relationship between an officer's level of education and involvement in reported use of force incidents. They also note that 21 percent of the sample had a four-year degree and college graduates were evenly distributed across age ranges, so the sample included older, college-educated officers. Fyfe (1988) also used departmental records, but did not directly examine education. Using an IQ analysis of officers, he found that shootings by "dull" officers (officers with an IQ below 90) were more than two times as likely to be condemned by the department as shootings by normal or bright-normal officers (IQ of 90-124). However, the highest department shooting condemnation rate came from the really bright officers (IQ 124-133), because these officers were usually in high ranking positions where they did not have legitimate reasons for using their service weapon. Fyfe notes that this issue is significant for educational research as well, because the impact of educational attainment can be confounded by assignment.

Using observational data from the Police Services Study of 24 departments in three metropolitan areas, Worden (1996) found that officers with a college degree were more likely to use reasonable force, but no educational difference was found in an examination of excessive force. In more recent research, Terrill and Mastrofski (2002) analyzed systematic social observations of 638 officers in two departments, finding that

officers with more education were less likely to use force. They used an eight-level ordinal variable to measure education, so they were unable to isolate specifically the impact of a college degree. They still concluded that increasing educational standards for hiring may be beneficial in reducing police use of excessive force. In an extension of this work, Paoline and Terrill (2007) reaffirmed this recommendation. They more directly assessed the impact of a college degree by dividing education into high school diploma only, some college, and a four-year bachelor's degree. They found that officers with any college were less likely to use verbal force (threats and commands) in encounters with citizens compared to officers with just a high school degree. However, only officers with a four-year degree were significantly less likely to use physical force. As Paoline and Terrill note (2007: 192) "it appears that simply attending college is not enough when it comes to less reliance on physical force. In this respect, actually completing a 4-year program is most beneficial." In addition, they found that more experienced officers also used less force. The interaction term between education and experience was statistically nonsignificant, indicating that education provided no extra benefit for experienced officers in terms of reducing use of force behavior.

Several studies have indirectly studied the impact education has on the abuse of authority by looking at the relationship between officer education and number of citizen complaints. Citizen complaints are not ideal for examining use of force behavior, but the data are easier to collect and analyze than in observational studies. Citizens, however, likely never report the majority of abuse of force incidents (Worden & Catlin, 2002). Terrill and McCluskey (2002) find support for the idea that officers with more complaints are truly "bad apples" but they also find evidence that "more productive" officers who

make more arrests and interact more with the public are also likely to have more complaints. As Worden and Catlin (2002) point out, citizen complaints are a reflection of not only the officer's behavior (and potential misbehavior), but also the citizen's likely biased view of what occurred during the police-citizen encounter. Still, it seems reasonable to look at rates of civilian complaints against officers to see if they vary by education level.

Kappeler, Sapp, and Carter (1992) examined founded complaints filed against 120 officers over a five-year period. They found that officers without college degrees had significantly more citizen-initiated complaints than officers with a college degree. The 29 percent of officers who did not have a college degree were responsible for 67 percent of the officers who had three or more citizen complaints. Wilson (1999) examined 500 officers over a ten-year period and found that officers with a college degree tended to have fewer complaints than officers without a degree. Officers without any degree had a significantly higher mean number of complaints, on average (2.68), compared to officers with a degree (2.03). Lersch and Kunzman (2001) found very similar results in a study of 700 officers in a large sheriff's office, as did Cascio (1977) in his study of officers in Florida. Cunningham (2006) examined disciplinary cases handled by the state commission between 1992 and 2002 in Florida. He found that officers with just a high school diploma made up 58 percent of officers, but were involved in 75 percent of the disciplinary cases. Conversely, officers with a four-year degree made up 24 percent of officers, but were involved in only 11 percent of disciplinary actions. Palombo's (1995) research of the Los Angeles Police Department found that officers with no college had significantly more citizen complaints than officers with some college, and as a group,

officers with a bachelor's degree had the lowest average number of citizen complaints. Davis and Rostow (2003) found that officers with more education were significantly less likely to be fired because of disciplinary problems or complaints. Cohen and Chaiken's (1973) study of 521 officers in the New York Police Department found that officers with a high school diploma were significantly more likely to receive civilian complaints than officers with some college (since there were so few college graduates in the dataset, officers with any college education were combined in the analysis).

The research is not entirely uniform in this area, however. Pate and Fridell (1993) collected the first national-level data on police use of force policy. In their analysis of data from 1,111 departments, they found an inconsistent relationship between education and citizen complaints. For example, in sheriff's departments, college-educated officers were underrepresented among officers receiving a complaint (a positive outcome). But in city departments, officers with a bachelor's degree made up 19.3 percent of all officers and 18.3 percent of officers receiving a complaint, indicating a weak or nonexistent relationship between education and complaints. In their analysis of excessive use of force complaints of 800 officers, Brandl, Stroshine, and Frank (2001) found education to be a statistically insignificant predictor of the number of complaints received. In general, most of the research indicates that college-educated officers have less citizen complaints, which makes it seem probable that these officers are abusing their authority less frequently. In sum, research in the area is somewhat mixed, although the most recent observational data and most of the research using departmental complaint data support the conclusion that college-educated officers abuse their authority less.

Police Attitudes and Use of Force

Since the present study will examine the impact education has on attitudes, it is important to also consider attitudinal research on police use of force. Research specifically examining higher education and officer attitudes related to the use of force is also limited. In general, research indicates that officer attitudes are not necessarily strongly linked to officer behavior (Worden, 1989). This seems counterintuitive at first, because "to maintain that people act in ways that are inconsistent with their attitudes seems patently absurd" (Worden, 1989: 670). Indeed, some scholars have created typologies of officers, based on attitudes, and then have used direct observation (if the typologies were tested at all) to show that these attitudinal typologies were linked to specific behaviors. (see for example Muir, 1977; White, 1972). These results are based more on the impressions of the observers than on quantitative data. The social psychology literature, however, consistently indicates that attitudes do not directly correspond to behaviors (Fazio, 1986). Most research finds that the link between attitudes and behaviors is weak, particularly when using general attitudes to predict single behaviors (Ajzen & Fishbein, 1977; Wicker, 1969). However, researchers find higher correlations between attitudes and behavior when using general attitudes to predict aggregate behavior or when using a specific attitude to predict a specific behavior (Ajzen & Fishbein, 2005). The current study will use both general attitudes on abuse of authority that should correspond to abuse of authority behaviors and specific questions related to use of force scenarios that should correlate with specific behavior in use of force situations. These correlations will not be perfect, in part because of situational pressures that may impact behavior. In policing, these situational pressures would include departmental policies and peer influences, which can dramatically affect behavior

(Engel & Worden, 2003). In use of force situations, research has indicated that situational factors are more important than attitudes (Worden, 1996), but attitudes have not been studied frequently or effectively (Lester, 1996). Frequently, just one question is used to assess attitudes, and better measures of attitudes may show a closer link to behavior (National Research Council, 2004: 136). It also seems plausible that abuse of authority situations are times when individual officer attitudes may be particularly salient. Departmental policies, for example, will not be supportive of abusing authority, so if higher education positively influences officer attitudes, it seems more likely that these attitudes would translate into positive behaviors, since the "pressure" from the department to not abuse authority would coincide with officer beliefs. In one of the few (if not only) assessments of use of force attitudes and use of force behavior, Worden (1996) found that officers with more positive attitudes towards the use of force did use improper force more frequently. This effect, however, was only marginally significant and explained little of the variation in use of force. Although there is not a perfect link between attitudes and behaviors, scholars agree that attitudes are an important avenue for study (Ajzen & Fishbein, 2005), and attitudinal study seems particularly relevant for a serious and rare event such as the abuse of police authority. In addition, it seems logical that attitudes could impact not only behavior but also departmental culture if less supportive attitudes regarding abuse of authority could weaken the undesirable characteristics of the subculture often associating with policing, such as looking the other way when fellow cops engage in deviance (Kappeler, Sluder, & Alpert, 2005). This impact would not be reflected in behavior, but this additional potential change in

organizational climate makes attitudes important to examine (see Paoline, Myers, & Worden, 2000).

Research related to college education, attitudes, and use of force has been indirect for the most part, exploring the impact education has on attitudes related to the abuse of police authority. Still, a few studies have more directly assessed how education impacts attitudes on use of force. Smith and Ostrom (1974) found a weak relationship between years of college and officer acceptance of limits on the use of force in their study of 712 officers from 29 different departments. Officers with more years of college were more likely to disagree with the statement that patrolmen in tough neighborhoods could reduce serious crime problems more effectively if there were fewer use of force restrictions, but the results were only marginally significant. Officers with some college experience, however, were more supportive of Supreme Court decisions, such as Miranda vs. Arizona, which limited police authority. While more than 60 percent of respondents found the decisions to be harmful, years of college education was significantly related to answering that the decisions were helpful for policing. Worden (1990) found that officers with a college degree were more likely to have a positive attitude towards legal restrictions on police use of force in his analysis of 1,417 officers from 24 police departments in three metropolitan areas. He measured legal restrictions by summing answers to questions about whether officers should have to worry about "probable cause," whether police officers would be more effective with fewer restrictions on use of force (the same question used by Smith and Ostrom) and whether only officers should be allowed to judge other officers in use of force cases. The effect of education, however,

was not highly significant, and the coefficient indicated education only had a small impact on attitudes.

Additional studies have assessed how college education impacts attitudes and beliefs related to police abuse of authority. Roberg (1978) studied 118 officers, finding that officers with a college degree were less dogmatic and more open-minded. This research confirmed the results of Guller (1972) and Smith, Locke, and Fenster. (1970). Guller found that policing students about to finish college were significantly less dogmatic and less punitively oriented than a comparable group of students about to begin undergraduate studies in policing. Smith and colleagues found that a group of 39 college-educated officers was much less authoritarian than an equivalent group of non-college educated officers. These results are consistent with the more general postsecondary education literature, which finds that authoritarianism and dogmatism decline fairly dramatically over the course of college (Pascarella & Terenzini, 1991). Open-mindedness does not directly assess an officer's likeliness of abusing their authority, but less dogmatic officers will presumably be more likely to follow proper departmental rules and regulations and will be more tolerant towards others (Rokeach, 1954). Similarly Shernock's (1992) study of 177 officers in 11 police departments found that officers with a college education were more likely to place a high value on ethical conduct. However, education level was not significantly associated with intolerance towards the misconduct of other officers.

Not all research has found an impact of education on police officer attitudes. In his 1974 study of 396 police officers, Weiner concluded that educational level had no impact on police officer attitudes. He found that officers with more education were no

more tolerant or less cynical than other officers, arguing that education could have no impact because attitudes are deeply rooted in the police role. Parker and colleagues (1976) took issue with these conclusions and pointed out that 25 of the 75 relationships Weiner (1974) examined were statistically significant, indicating, at the very least, a modest impact of education on attitudes. Weiner (1974) does make the important point that the findings of studies such as Smith, Locke, and Fenster (1970) are problematic, because of the "predisposition factor." College-educated officers may have different attitudes because people who make the decision to attend college are different. Thus, these officers would be different, regardless of whether they actually attended college or not. Parker et al. (1976) respond to this by noting the findings of Guller's (1972) study, which did indicate attitude change over the course of college. More recently, Paoline (2001) analyzed the attitudinal and cultural outlooks of 611 officers from two departments, finding seven different cultural clusters. The most educated officers were found in two of these clusters, Traditionalists and Lay-Lows. As the names indicate, these groups both have "less than admirable attitudinal orientations" (Paoline, 2001: 125). Traditionalists tend to have negative views of legal restrictions and the general public, and they tend to be in favor of aggressive law enforcement, all attitudes that would seem to promote the abuse of police authority. Lay-Lows do not reject legal restrictions on force and have more favorable views towards citizens, but they tend to do the bare minimum amount of law enforcement and avoid contact with citizens. Although these attitudes are not particularly positive for effective policing, particularly community policing, Lay-Lows would be unlikely to be involved in abuse of authority situations, because these situations could lead to unwanted attention and confrontations with

supervisors. Still, Paoline's (2001) overall findings do not show evidence of a strong beneficial impact of college education on attitudes.

Bowker's (1980: 17) conclusion that "all other things being equal, there is a linear relationship between degree of exposure to college education and effects on police attitudes" seems overstated in light of the research on this issue, but there is some evidence that a college education can impact officer attitudes. In general, research related to education and attitudes associated with police use of force is limited, although there seems to be some evidence that a college degree may be beneficial for creating attitudes conducive to the proper use of police authority. The present study will help clarify the extant literature by more conclusively determining if this is the case.

Limitations of Prior Research

As noted before, research on the impact higher education has on police officers attitudes and beliefs has been limited and inconclusive. This study will attempt to address some of the shortcomings of prior research to arrive at a more definitive answer regarding the impact a college degree has on police officer attitudes and beliefs regarding use of force and abuse of authority. First, most studies focus on a small number of officers or a small number of departments, or both. The Project on Policing Neighborhoods produced an incredibly rich dataset that has allowed for several analyses of the impact of education on use of force (e.g. Paoline & Terrill, 2007; Terrill & Mastrofski, 2002). The data, however, came from officers in only two cities: Indianapolis, IN and St. Petersburg, FL, raising questions about the representativeness of findings using this data. The Weisburd et al. (2001) data utilized in the current study

have the major advantage of being a nationally representative sample of officers, making it possible to generalize the results to the entire United States.

Second, as mentioned above, police attitude measurement with a single indicator makes it difficult to tap into multidimensional attitudes accurately. The current data include an extensive set of questions designed to explore fully officer beliefs and attitudes regarding police abuse of authority. The authority scale described in the next chapter includes nine different indicators of officer abuse of authority attitudes. The data also have the advantage of asking about officer reactions to hypothetical situations, which will provide additional information on officer attitudes and potentially some insight into officer behavior.

Third, most prior research has used a limited number of control variables to assess the impact of education. Demographic controls usually are limited to age, years of experience, gender, and sometimes race. As detailed in the next chapter, the current study will include these variables, while also controlling for officer job satisfaction, officer rank, martial status and number of young children, involvement in community policing and prior training in diversity, interpersonal skills, and ethics. In addition, since this study employs a multiple department sample, department size and geographic location can also be controlled for.

Finally, prior research on education has suffered from multiple flaws. Hudzik (1978) notes two main problems. First, as mentioned earlier, there is an issue with extraneous or predispositional variables. Very few studies have effectively isolated these variables to determine if college is actually making a difference or if people who go to college are different, even without attending college. Unfortunately, the current data do

not adequately address this issue, because of a lack of extensive data on an officer's life situation prior to joining the police force. This could lead to model misspecification issues, because important pre-service variables, such as family background, may be omitted. For example, if high childhood socioeconomic status was actually driving attitudinal change, completing a bachelor's degree could appear to be having an impact on attitudes, when in reality that finding would be a reflection of omitted variable bias due to the high correlation between socioeconomic status and attending college. I discuss this issue further in the final chapter. No research in this area has yet included all potentially relevant pre-college and pre-service variables.

Second, there is a problem isolating what component variables are important parts of "college." These component variables include the duration of college, the college environment, and the curriculum. The emphasis on the completion of a bachelor's degree, detailed in the next chapter, is a way of at least partially addressing what type of higher education should have an impact. Hudzik (1978) makes some excellent points about the need to measure the impact of education more effectively, and 30 years after his article, it is disappointing to not find any studies that have effectively incorporated all of his recommendations. Still, the current research will address the limitations of prior research by using a nationally representative creating a scale with multiple attitudinal measures, incorporating multiple control variables, and partially assessing the important component variables in college education.

HYPOTHESES

This thesis will test several related hypotheses that follow from the research questions outlined at the outset of the study and the literature reviewed in this chapter.

Hypothesis 1. I hypothesize that officers with at least a four-year bachelor's degree will differ from officers with less education in attitudes about police use and abuse of authority. More specifically, I hypothesize the following:

> *Hypothesis 1a.* I predict officers with a college degree will disagree more with statements supportive of unreasonable extensions of police authority, statements supportive of the code of silence, statements supportive of breaking the rules to get the job done, and statements about outsiders being overly concerned with police brutality.
>
> *Hypothesis 1b.* In examining hypothetical abuse of authority situations, I predict officers will view the situation as more serious and be more supportive of reporting fellow officers who engage in the abuse of authority.

. The impact of education is expected to remain even when a variety of demographic and departmental factors are controlled for.

Hypothesis 2. I hypothesize that officers who obtain a college degree before they are hired will differ from officers who have acquired a college degree while on the job. An attitudinal change for college-educated officers is predicted to occur only for pre-service college degrees, because once a recruit has become an officer, police culture and departmental factors could diminish the impact of any additional education.

Hypothesis 3. I predict that these differences will appear most strongly for officers who have obtained at least a bachelor's degree. A pre-service college degree is expected to have a differential and more beneficial impact compared to some college or even an associate's degree.

CHAPTER III: DATA AND METHODS

Description of the Data

This research uses data from a 1998 Police Foundation survey of police officers' attitudes regarding abuse of authority (Weisburd et al., 2001). A nationally representative sample of 925 officers was surveyed using questions covering a variety of issues related to police use of authority. The survey included four sections: policing issues, police response to citizen behavior, the impact of community-oriented policing, and police officer information. The policing issues section includes questions about an officer's view of police use of force, the response to citizen behavior section includes two scenarios regarding use of force situations and follow-up questions, and the impact of community policing section examines the officer's experience with community policing. The police officer information section was used to gather extensive demographic information about officers that will be used in the construction of the independent and control variables discussed below. This dataset has the major advantage of being the first national study ever of this subject area, and it is just the second survey ever to use a random, nationally representative sample of police officers. The first, conducted by LeDoux and Hazelwood (1985), concerned only police officer attitudes towards issues related to rape. Survey data are advantageous for this study, because effective field research is difficult to conduct, since police officers use force so infrequently and when it does occur, determining when force has been abused is a highly subjective process (Adams, 1996). Thus, examining police performance to determine how behaviors related to use of force varied by educational level would be costly and time consuming and may not produce sufficient analyzable data. In addition, some officers may never be involved

in a use of force situation and thus would be excluded from any study relying only on observational measures. Survey data provide a unique opportunity to assess multiple officers' beliefs and attitudes about use of force without time-consuming observation of officers in the field.

The target population of interest for this study is United States police officers. Much policing research focuses on officers in a small number of departments (or often just one department), which makes generalizing to the larger population exceptionally difficult. A major benefit of this dataset was the creation of a much wider initial sampling frame, which greatly enhances external validity. The sampling process had two major steps. First, the Police Foundation needed to create an accurate listing of all eligible police departments in the U.S. Second, after using probability sampling techniques to choose departments and agencies, the Police Foundation needed to obtain a list of officers from each selected department to randomly sample from. To compile a list of all eligible agencies, the Police Foundation drew on the work of Maguire and associates (1998) who attempted to compile a comprehensive list of U.S. law enforcement agencies. Maguire and his colleagues combined data from the Uniform Crime Report collected by the FBI, the Directory Survey of Law Enforcement Agencies conducted by the U.S. Census Bureau, and grant applications submitted to the Office of Community Oriented Policing Services. This list was narrowed by instituting certain minimum eligibility criteria for agencies. Departments had to have at least 10 full-time sworn officers, the agency needed to have primary responsibility for policing a residential population (e.g. no special police forces), and the department had to be a municipal or county agency. Sheriff offices, federal agencies, and state police were assumed to have

too many duties outside of policing residential populations. The final sampling frame of agencies was 5,042 police departments that included between 91.6 and 94.1 percent of the full-time sworn police officers in local police departments in the U.S. These departments employed an estimated 350,000 officers (Weisburd et al., 2001: 6).

Sampling Procedure

The Police Foundation used multistage cluster sampling with stratification to obtain a representative sample of police officers. The unit of analysis for this research is the individual police officer. The departments were divided into three strata based on department size. The nine largest departments in the nation were in the certainty stratum, the midsize stratum consisted of departments with 25 or more full-time sworn officers (but less than the nine largest) and the small stratum included departments that had at least 10 officers but less than 25. Within each stratum, departments were organized by geographic region (Northeast, South, North Central, or West)[1]. Probability proportional to size (PPS) methods were used to randomly sample within each stratum. The nine largest departments had a probability of 1.0 of being included in the sample and every other department was ranked and assigned a probability based on size. Random sampling produced 84 departments from the midsize category and 28 from the small department category. These 121 departments were contacted and asked to provide a roster with the name and rank of all full-time sworn officers, a phone number and address at the

[1] States were classified in the following way: *Northeast*: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont. *South*: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. *North Central*: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. *West*: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

department for each officer, and a badge or employee number for each officer. A total of 113 departments agreed to participate for a 93.4 percent agency response rate. Departments in all three strata declined. The total participating agency sample consisted of eight of the nine certainty departments (89 percent response rate), 78 of the 84 midsize departments (93 percent response rate), and 27 of the 28 small departments (96.5 percent response rate).

For each of the 113 departments, random sampling was used to generate a sample of 1,112 potential respondents. For the certainty departments, the number of officers chosen was based on the proportion of total officers that department represented, for midsize departments 10 officers were sampled, and for small departments, an average of 4.5 officers were surveyed (half were randomly selected to have 4 officers surveyed and the other half had 5 surveyed). Sixty of those originally chosen were ineligible for various reasons (e.g. were not full-time sworn officers), leaving a final sample size of 1,060 officers. Of these officers, a total of 925 completed the survey for a response rate of 87.3 percent. When the department response rate and the individual officer response rate are combined, the overall response rate for the entire project is 81.5 percent, which is above acceptable standards for social science research (Babbie, 1990). The survey was administered by telephone while the officer was at work and took about 25 minutes to complete.

RESEARCH METHODOLOGY

Dependent Variables

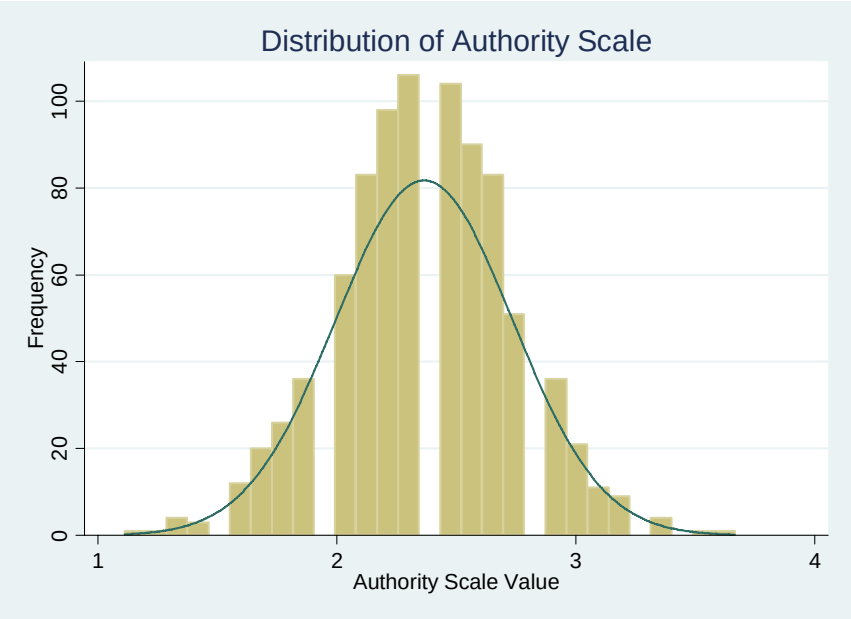
Two related dependent variables will be examined based on attitudinal data about police use of force. The first dependent variable is a scale combining answers to nine

questions regarding an officer's beliefs on police use of authority. These questions all use Likert responses (strongly agree, agree, disagree, strongly disagree). The scale uses questions in four broad categories. First, three questions assess an officer's beliefs regarding how much force is acceptable. These questions ask the officer to respond to the following statements: "police officers are not permitted to use as much force as is often necessary in making arrests," "police officers should be allowed to use physical force in response to verbal abuse," and "it is sometimes acceptable to use more force than is legally allowable to control someone who physically assaults an officer." Second, two questions ask about an officer's beliefs regarding department rules and following the rules. The officer responded to these two statements: "police department rules about the use of force should not be any stricter than required by law" and "always following the rules is not compatible with getting the job done." Third, two questions ask officers about their level of agreement with the police code of silence. The code of silence is frequently seen as a key component of the police culture that stresses never reporting another officer's mistakes and rule violations (Kappeler et al., 2005). Officers responded with their level of agreement to these two statements: "the code of silence is an essential part of the mutual trust necessary to good policing" and "whistle blowing is not worth it." Finally, two questions asked officers to express their opinion about how outsiders view police brutality. These two statements are: "the public is too concerned with police brutality" and "the newspapers and TV in this country are too concerned with police brutality."

To construct the dependent variable, these nine items will be summed and divided by nine to create an average score for each officer. The Cronbach's alpha for the nine

items is 0.7007, which is acceptable for a reliability test (Nunnally & Bernstein, 1994). Each survey question has four possible answers and values ranging from 1 to 4 with 1 corresponding to "strongly disagree" and 4 corresponding to "strongly agree." This average score is a continuous variable with a theoretical range of 1.0 to 4.0 and an actual range of 1.11 to 3.67. The mean is 2.37 with a standard deviation of 0.37. If higher education has a beneficial impact on attitudes, then college-educated officers should be more likely to answer "strongly disagree" to all of these questions. This approach has the major benefit of creating one continuous dependent variable that can be analyzed using an ordinary least squares (OLS) regression model. I present the means and standard deviations for each of the nine questions used in the scale in Appendix A. In Figure 1, I show the distribution of the authority scale. This dependent variable appears close to normally distributed, which will make hypothesis testing with OLS acceptable and appropriate, since a normally distributed dependent variable will lead to normally distributed residuals. This is confirmed using the skewness statistic. The scale has a skewness statistic of -.054, which indicates a slight negative skew, but the value is less than twice the value of the standard error of the skewness statistic (.083), so there are no major concerns about normality.

Figure 1: Distribution of authority scale scores with comparison to normal curve



I will measure the second dependent variable with questions from the police response to citizen behavior portion of the survey. These questions ask respondents to provide their opinions to two different scenarios in which hypothetical officers use potentially excessive force in scenarios. Two different versions of the first scenario were used, and one half of the officers randomly received each version. Both are similar in that an officer approaches a group of youth who are standing on a street corner and proceeds to throw them up against a wall and use demeaning language towards them after they refuse to leave the area. In the second scenario, a suspect in handcuffs in the police station spits in the face of the officer, and the officer responds by pushing the suspect in the face, causing the suspect to fall out of his chair onto the floor. Full text of the scenarios is available in Appendix B. For each of the two scenarios, two questions will be of interest. The first question asked "how serious do you consider the officer's behavior to be?" and participants gave one of five possible responses: not serious at all, not very serious, moderately serious, quite serious, or very serious. The second question

asks officers “do you think you would report a fellow officer who engaged in this behavior?” and possible response categories are: definitely not, probably not, possibly yes, or definitely yes. The scenarios are useful to analyze because they present situations that are not clear instances of police excessive force, which creates a good amount of variation in responses. For example, for the second scenario, responses were distributed such that every response category for “how serious do you consider the officer’s behavior to be” had at least 15 percent of officers.

There are multiple possible methods for analysis of the second dependent variable. The most appropriate method will be the use of principal components analysis (PCA). PCA is beneficial because it can minimize the number of variables while also maximizing the amount of information presented in the analysis (Gorsuch, 1974). Although this approach will make interpretation less intuitive, unlike the first dependent variable, it will not be appropriate to sum the two items for each scenario to create a scenario scale. The seriousness questions range in value from 1 to 5 and the likelihood of turning an officer in questions range in value from 1 to 4, and since there are two different metrics, the seriousness questions would be disproportionately represented in a summed or averaged scale.

An additional potential analytic strategy would be to examine each of the four questions related to the scenarios separately in an ordered logit model, also known as an ordinal regression model (McKelvey & Zavoina, 1975). Ordered regression models have the benefit of not assuming that the distance between every two categories in the ranking is equal. However, this method assumes the covariates described below would have a differential impact on each of the four scenario questions, since a different model would

estimated for each question. This seems illogical, since the four questions are actually two questions asked of each of two similar scenarios. The Cronbach's alpha for the four questions is 0.7342, indicating the four questions do share similarities. In addition, the correlations between the four questions range from 0.22 to 0.62, which makes significance tests of each question problematic since the variables have some overlap, resulting in potentially biased p-values (Gorsuch, 1974: 323). In addition, the ordinal regression model makes the assumption of proportional odds (or parallel regression), and this assumption is usually difficult to meet in practice (Long, 1997). Thus, use of PCA seems to be most appropriate. For the first dependent variable, factor analysis or PCA will not be used since each of the nine questions use the same metric, the Cronbach's alpha is sufficiently high, and interpretation will be easier using an averaged scale.

Thus, PCA was used as a data reduction method to combine the four authority scale questions and create a component score for each officer. It should be noted that factor analysis is an alternative approach for data minimization and factor analysis and PCA are distinctly different methods. Factor analysis, however, would not be appropriate for the current study, because the method does not make it possible to calculate scores for each observation (Costello & Osborne, 2005; Fabrigar et al., 1999; Velicer & Jackson, 1990). These component scores are necessary to produce the second dependent variable for regression analysis. PCA led to the extraction of one retained component with an Eigen value of 2.26. The other extracted components all had Eigen values of less than 1.0 and were dropped from the analysis. This component explains just over 56 percent of the variance in the four scenario questions. The component loadings for each of the four questions are presented in Table 1. Each of the loadings exceeds the conventional

standard of .40. In addition, the Kaiser-Meyer-Olkin test of sampling adequacy produced an overall value of .53, which exceeds the conventional standard of .50, but not by much. The chi square value for Bartlett's test of sphericity is over 1100, which means I can reject the null hypothesis that the correlation matrix for the four variables is an identity matrix. Thus, I can be confident that there the four variables are correlated, which confirms the earlier reported correlations. This principal PCA meets all conventional standards, but I would ideally extract a higher percentage of the variance from these four questions. I will use the PCA results in the analyses for the next chapter to maintain parsimony in my presentation of results, but I will also conduct sensitivity analyses using multinomial logistic models (Long, 1997) with each of the four questions used in this PCA to examine whether results differ. Multinomial logistic regression has less restrictive assumptions than ordinal regression.

Table 1: Component loadings for principal components analysis of scenario questions

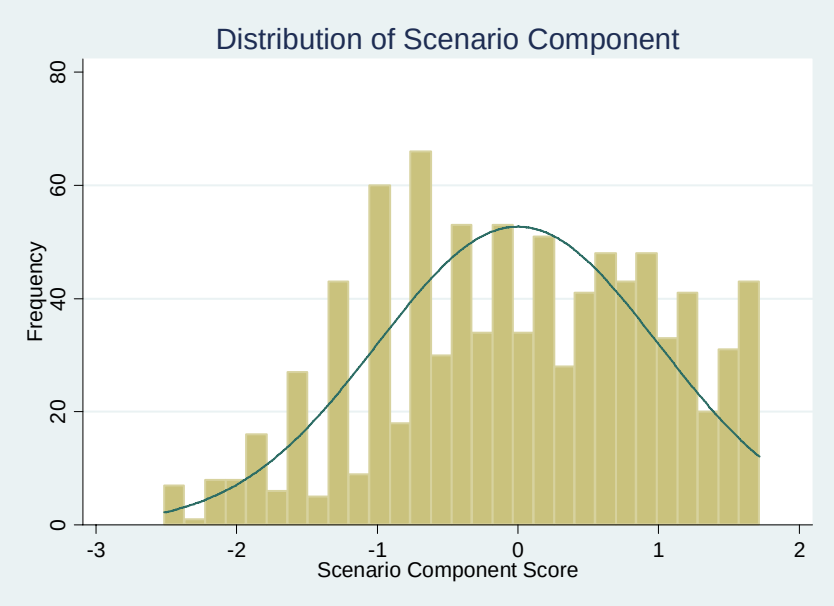
Question	***Component Loading***	***Communalities (Variance Explained)***
Seriousness of officer's behavior (Scen. A)	.675	.455
Would you report officer? (Scen. A)	.763	.582
Seriousness of officer's behavior (Scen.B)	.712	.506
Would you report officer? (Scen. B)	.844	.712

N = 905

The predicted component scores were calculated for each officer. These scores will be used as the dependent variable to test how education impacts officer answers to the abuse of authority scenario questions. The component scores have a mean of 0, a standard deviation of 1 and a range of -2.52 to 1.72. I present the distribution of the scenario component in Figure 2. The data appear reasonably normal, which will allow for acceptable hypothesis testing using OLS. The data, however, are more skewed than the authority scale. The skewness statistic of -.195 is greater than double the standard

error of the skewness statistic (.081), but it is not substantially greater, and in addition, the median (-.0059) differs only slightly from the mean of 0. Thus, these data are somewhat negatively skewed, but the departure from normality should not be too large to generate any problems with hypothesis testing.

Figure 2: Distribution of scenario component scores with comparison to normal curve



In terms of the validity of these two dependent variables, there is a significant level of face validity. All of the questions ask about issues related to abuse of authority or use of force and its consequences. There also is evidence of content validity. Use of force and abuse of authority are fairly broad topics, but by creating two scales that assess attitudes in four different areas and responses to two scenarios, several different aspects of this concept are being tapped. The second dependent variable, while still assessing attitudes, makes an effort to get at behaviors by asking officers how they would act in a particular situation. This method has been viewed as helpful, because it "partly bridges the gap between attitudes towards excessive force in the abstract and behavior on the street" (Guller & Toch, 1996: 315). The use of these two vignettes is also beneficial

because use of force and abuse of authority behavior is difficult to ask about directly, since officers, even when they know a survey is confidential, are unlikely to report their own inappropriate activity (Klockars et al., 2000). The vignette method is becoming increasingly common in policing research as a way to present officers with realistic situations about sensitive areas in a non-threatening way (Hickman et al., 2001). The scenarios in the current study differ from typical vignettes because they do not directly ask the officer what he or she would do in a similar situation. Also, the survey used only two scenarios, so as a result, the measure of hypothetical behavior is somewhat limited. Still, the scenario component is a useful complement to the authority scale because the later focuses on more global attitudes about abuse of authority, while the former gets at more situational specific attitudes. Although these situational assessments are limited by the use of only two scenarios, they are useful for providing a fuller picture of officer attitudes. Since the data have never been subject to analysis using scales, there is no means of using exact prior measures for index construction, which is a threat to internal validity. Theoretically, the scales were created in an effort to combine related topics to maximize construct validity. In the first scale, the four categories were created based on distinctions used by Weisburd and associates (2001) in their presentation of the data. For the second scale, all the questions about officer attitudes related to the scenarios were included.

Main Independent Variable

The key independent variable of interest is the officer's level of education. The survey asks two questions about officer's level of education: level of education achieved before the respondent became an officer and current level of education. As noted in the

previous chapter, a pre-service bachelor's degree is expected to have the greatest impact on attitudes. Officers who acquire a pre-service bachelor's degree may differ from those who obtain a degree while already employed as an officer. Officers who acquire a degree in-service likely have already formed opinions and attitudes regarding police use of authority and thus any impact education could have would potentially be diminished (Worden, 1990). Using pre-service educational obtainment will avoid confounding the impact of education with the impact of work environment, colleagues, and training. This original pre-service education question has a significant number of missing values (valid n = 786 out of 925 surveys). The missing data problem, however, can be largely solved with available data using deductive imputation (Brick & Kalton, 1996). Every single officer who had a missing value for pre-service education level had a current highest education level of high school graduate or less. Thus, these missing values can be recoded as high school graduates, since officers who had only a high school education at the time of the survey certainly had no more than a high school education before entering the police service. When the missing values are recoded, there are 924 valid responses for pre-service education. Pre-service education is measured by asking respondents "what level of education did you complete before becoming a police officer?" Education is an eight-level ordinal variable with the following values: some high school, high school graduate/GED, some college, associate's degree, bachelor's degree, some graduate or professional school, master's degree and doctoral degree/law degree (although no respondents acquired a doctoral or law degree prior to employment). The current education question asks officers "what is the highest level of school that you've completed?" and has the same answer choices. The data indicate about 24 percent of

officers surveyed had received at least a bachelor's degree prior to hiring and about 31 percent had received at least a four-year degree at the time of the survey.

For this study, the primary research question is whether officers with at least a bachelor's degree prior to hiring differ in their attitudes towards police use of authority compared to officers with less than a four-year degree, so just examining the impact of level of education will be insufficient. The acquisition of a four-year degree is a significant educational achievement that is distinctly different from completing some college or even an associate's (two-year) degree, and the impact of education is hypothesized to be different for those with a four-year degree or higher (Hudzik, 1978; Sherman et al., 1978; Shernock, 1992). Thus, education will be recoded, creating a binary variable where 0 refers to those with less than a college degree (some high school, high school graduate/GED, some college, and associate's degree) and 1 corresponds to those with at least a four-year degree (bachelor's degree, some graduate or professional school, master's degree, doctor degree, law degree, Ed.D.).

The final model will be re-run using the current education level variable to test Hypothesis 2 and see if any differences emerge. This comparison will help get at the "predisposition issue" mentioned issue (Weiner, 1974). It could be that officers who receive a college degree before they join the police force are different even before attending college, so that a college degree is actually confounded with unmeasured pre-college characteristics, such as family background, wealth, and intelligence. A comparison between pre-service college graduates and officers who receive their degree while already employed with the police will shed light on the issue. If there are no

differences between these two groups, then this provides evidence contrary to Weiner's (1974) argument about predisposition.

A third analysis will examine whether officers who completed any college are distinctly different in attitudes from those with just a high school diploma. In this analysis, I will use three binary variables, one for officers that attended some college (but did not complete a degree), one for officers who received an associate's degree, and one for officers who earned at least a bachelor's degree. An associate's degree is not hypothesized to have as powerful an impact as a four-year degree because many two-year programs are more vocational than academic in nature and are not expected to have a major effect on police attitudes (Worden, 1990). Goldstein (1977: 295) points out that four-year programs, compared to two-year programs, provide a broader curriculum that has some background in the liberal arts with a much higher quality of faculty. Four-year programs also usually provide the benefits of "intermixture on a college campus." Sherman and associates (1978) echo Goldstein's (1977) concerns about the quality of two-year programs, and note that the two-year terminal police education degree should be phased out because community college programs decrease student aspirations for further learning and reinforce police work as paraprofessional. As mentioned above, these differences make four-year programs distinctly different and their breadth, comprehensiveness, and higher-quality instruction all make it seem likely that attitude change would be more likely to occur. Like earning an associate's degree, attending some college, but not receiving a degree, is not expected to have the impact on attitudes as acquiring a four-year bachelor's degree. The regression analysis using these three

dummy variables will provide a test of Hypothesis 3 by examining whether a bachelor's degree has a more substantial impact on attitudes.

Control Variables

Officer Demographic Variables

This study will include other independent variables in the final model as control variables. Age, gender, and race/ethnicity all may have an impact on officer's education and attitudes and are necessary controls. Although previous research has indicated that police use of force is largely unrelated to an officer's personal characteristics such as gender, age, and ethnicity (Adams, 2005), this research is not entirely conclusive and has usually not examined attitudes, which is why I will include these variables in the model. In addition, these factors may be related to educational achievement. Gender differences are now largely nonexistent in education, but minorities may still face obstacles in obtaining a college degree. The possible exclusion of substantial numbers of minority recruits is a major concern of increasing educational standards (Decker & Huckabee, 2002). The proportion of Americans who receive a college degree continues to increase, so that younger officers may be more likely to have received a college degree (Roberg & Bonn, 2004). Gender is a binary variable indicating whether the respondent is male or female. Race will be assessed with two binary variables that indicate whether or not the respondent is black and whether or not the respondent is a race other than white or black (Asian, American Indian or Alaskan Native, Native Hawaiian or Pacific Islander, other, or mixed race). Thus, white respondents will be used as the reference group. For ethnicity, a binary variable will be used to denote whether the respondent is of Hispanic,

Latino, or Spanish origin (race and ethnicity were asked about in separate questions). Age is measured in years with a range of 22 to 66.

Officer Family Variables

I will also control for two family variables: whether the respondent has dependent children under the age of 18 and whether the respondent is married. These family variables may have an impact on attitudes towards police authority. For example, an officer who is married with children may be less supportive of police use of force, because he or she places a higher value on human life. In a related way, married officers may be less aggressive and violent, because marriage can serve as a stabilizing life event enhancing social bonds (Sampson, Laub, & Wimer, 2006). Number of dependent children ranges from 0 to 5 and was measured by asking the question "how many children do you have who are under 18 that are dependent on you?" It is not realistic to expect each additional child to have an incremental impact, so the variable will be recoded as a binary to indicate whether the respondent has children or not. Marital status was measured by asking officers "are you now…" with possible responses of married, living with someone as married, widowed, divorced, separated, or never been married. Two different binary variables will be constructed to get at the possible influence of marriage. First, a binary variable that indicates whether the respondent is currently married (or living with someone as married) or not (not married includes never married, divorced, widowed, and separated) will be used to determine if there is any impact of current marriage that needs to be controlled for. A related binary variable of whether an officer has ever been married will be substituted to determine if current marriage has a different impact than ever having been married. Thus, this second binary variable will be

coded with never been married as one category and all other marriage responses as the other. To avoid colinearity issues, the final model will only include one of the marriage variables.

Officer Work Experience Variables

Three individual-level variables about the respondent's experience as a police officer will be included. First, I will include the officer's years of experience as a police officer measured in years, measured by asking officers "how long have you been a sworn police officer?" This variable is highly correlated with age (r = .88), so it may be necessary to eliminate one in the final model to avoid colinearity issues. Since years of experience is on its face more substantively related to policing, age will be excluded from the final model if necessary. Second, a binary variable that indicates whether the officer's rank is patrol officer or not will be included. Officers who are not patrol officers have higher ranks (e.g. corporal, captain, deputy chief). The original question asked was "what is your current rank?" and produced 11 different responses with slightly more than half of respondents indicating their rank as patrol officer. Finally, I will use a binary variable that indicates whether the officer responded that they were satisfied or dissatisfied with their job using answers to the question "considering all aspects of the job, are you satisfied or dissatisfied with your current assignment?" These individual level characteristics are important as some have argued that any impact of education will disappear when rank and experience are controlled for (National Research Council, 2004; Paoline & Terrill, 2007). Bayley and Bittner (1997), for example, note that experience in the field is considered paramount within police organizations, and they point to multiple benefits of increased experience such as learning tactical choices and departmental

norms. That is, a relationship between education and improved attitudes or performance could be spurious and really a result of either officers with more experience or a higher rank (or both) being "better" police officers. Rank is an important control, because research indicates officers with more education tend to receive more promotions (Polk & Armstrong, 2001; Truxillo, Bennett, & Collins, 1998;) and do better on promotional exams (Whetstone, 2000), and higher ranking officers may be less supportive of police abuse of authority. Job satisfaction is an important control, because it could influence attitudes about the work environment, and could be related to education. Some have predicted that college-educated officers will be less satisfied with their job because policing does not adequately allow them to use their skill set (Trojanowicz & Nicholson, 1976).

Additional Officer Training Variables

I will also include three variables about the respondent's additional training. Each of these variables is binary and reflect three areas of additional training and instruction that could impact attitudes about police use of authority. Officers were asked "in your academy training or since becoming a police officer, have you taken any classes in interpersonal skills or interpersonal relations?" and similar questions asking whether they had received courses in ethics or in human diversity/cultural awareness. One way education is hypothesized to affect police performance by making officers more ethical (Worden, 1990; Shernock, 1992), so it is important to control for additional ethics training. Classes on diversity and interpersonal skills would likely make officers more tolerant and respectful of the community they serve and less likely to hold attitudes

supporting the abuse of authority (Shusta et al., 1995), so all of these variables serve both as important potential predictors of attitudes and as controls for the impact of education.

Departmental Variables

Finally, three variables about the department the respondent works in will be used as controls. The department-wide data provide some methodological issues for this research. Officers surveyed in this study are nested in departments in cities and various factors in the department and city could have an impact on attitudes about force. In an effort to ensure the confidentiality of responses, identifying information that linked a respondent to a particular department was destroyed by the research company hired to administer the survey (Mathematica Policy Research Inc. of Princeton, NJ). This is a major benefit for ethical concerns. Officers were revealing potentially sensitive information about their views regarding citizens and the use of authority, and thus, the fact that no responses can be traced directly to an officer likely made officers more candid in interviews. Since a separate company collected the data and destroyed identifiers upon presenting the data to the Police Foundation, results are both confidential and anonymous. Unfortunately, this makes it difficult to control for potentially important macro-level characteristics that could influence an officer's attitudes (and possibly education). I can control for three relevant characteristics of the department with the available data. First, the size of the respondent's department is measured as small, midsize, or certainty (large). Small departments are those with 10 to 24 full-time, sworn officers, midsize departments are those with 25 or more officers, and large departments are eight of the nine largest departments in the country. Two binary variables will be used that measure whether the department is small or not and whether the department is

midsized or not. Second, the geographic location of the department can be assessed and is coded as North Central, Northeast, South, or West. Weisburd and associates (2001) found a differential impact in opinions on use of authority only between Western departments and all others, but to ensure that geographic region is fully explored in the model, three binary variables will be used that indicate whether or not the department is in the South, whether or not the department is in the West, and whether or not the department is in the Northeast. The North Central region will thus serve as the reference category. Finally, a binary variable will measure whether officers responded that their departments were involved in community-oriented policing. Departments that embrace community-oriented policing may have officers with less supportive attitudes regarding abuse of authority, since community policing is intended, in part, to improve service to and build partnerships with community residents (Cordner, 2005; Greene, 2000). I present a table of descriptive statistics for the independent, dependent, and control variables in Appendix C.

Additional Statistical Procedures

As a result of the two-stage stratified cluster sampling approach, two additional statistical procedures are needed. First, a statistical correction is needed for weighting the responses of each officer. Mathematica developed this weighting procedure to account for differences in the probability of officers being chosen to complete the survey, and response rates at the departmental level and the individual officer level (Weisburd et al., 2001: 189-190). First, each department was assigned a weight representing the inverse of the probability of selection since probability proportional to size methods were used. Then, adjustments were made to account for non-response at the department level so that

each department's final weight reflected its share of the population. Third, each officer was given an initial weight that corresponded to the product of the department's final weight and the inverse of the probability of selection for each officer given their particular department. This weight was adjusted for non-response at the officer level to provide a final weight for each observation. Since random sampling was used, officers from the same department have the same final weight[2].

In addition, I need to use a correction to account for the clustered nature of the data and the stratification of departments by size. Since multiple officers were sampled from each department (cluster), there will be a correlation within clusters, because officers from the same department will likely share some similarities. Fortunately, Stata 9.0 can address both of these concerns. The survey regression commands can be used both to add the appropriate final weight for each observation and to create standard errors that account for the clustering. Taylor linearized standard errors will be used which provide a consistent and unbiased estimator of the variance that accounts for the correlations inherent in clustering (Binder, 1983; Williams, 2000). The survey regression procedures also account for the stratification by size, which makes it unnecessary and inappropriate to also include binary variables for department size in the final model. When department size is excluded from the model, however, it becomes impossible to determine if department size has a significant impact on officer attitudes. Thus, the models will first be estimated using the size binary variables to examine significance. If the variables are statistically nonsignificant, the survey regression with stratification

[2] Because the weights were constructed by an outside statistician, I was unable to make any adjustments based on missing data in the final results. The results in Chapter 4 were re-run without any weight adjustments and the substantive findings were unchanged, so the weights used are not biasing the final results.

methods will then be used to produce the most accurate estimates of the standard errors. If the department size variables are statistically significant, then I will include them in the final model. I will still weight each observation and adjust the standard errors for clustering. These estimates will use robust standard errors, instead of Taylor linearized standard errors. Adjustments for stratification actually lower the standard errors typically, because units within a stratum tend to be more similar than units in another stratum (i.e. small departments will be more similar to each other than they are to the nine largest departments in the U.S.). Thus, the Taylor linearized standard errors will produce the most accurate estimate of the standard errors, but not adjusting for stratification will not unfairly bias the results and will only make them more conservative. These survey data correction methods in Stata can be applied to all the regression models used in this study.

Missing Data

As can be seen in Appendix C, the authority scale has a fairly substantial number of missing values using standard listwise deletion techniques. When combining the nine questions about abuse of authority, only 861 of the 925 total respondents provided an answer to all nine questions. To address this issue, I employed a missing value multiple imputation technique in Stata (Royston, 2005). The missing values for the authority scale were filled in based on patterns in the data from each of the nine questions that made up the scale. After the imputation, values for the authority scale were available for all 925 respondents. The distribution of the data did not change dramatically after the imputation process. The scale has a mean of 2.36 (compared to 2.37 in the original scale) and the standard deviation remains 0.37. The minimum and maximum values also remained

unchanged with the imputed data ranging from 1.11 to 3.67. The authority scale models discussed in the next chapter will be re-run using the imputed data, but it appears likely that the results will not be changed dramatically since the imputed authority scale is similar to the original scale. Thus, if results are not substantively different, I will use the non-imputed data because this provides more conservative estimates that rely solely on the actual available data. In addition, although missing data lead to the removal of 64 officers from the sample using listwise deletion, the final sample of 861 for the first dependent variable still represents over 93 percent of the total sample. I examined missing data patterns by department and it does not appear that missing responses are clustered in particular departments. Of the 113 departments in the study, only two departments had over two missing data points. These two midsize departments each had three officers who did not answer all nine questions used in the scale.

CHAPTER IV: RESULTS

This chapter presents the results of the analyses testing the hypotheses described at the end of the second chapter. As noted in the previous chapter, these analyses all use ordinary least squares (OLS) regression. The results for the test of the first hypothesis, that officers with a pre-service bachelor's degree will have less supportive attitudes regarding the abuse of authority, are presented in Table 2. Negative beta coefficients indicate a movement towards "strongly disagree" on the nine questions in the authority scale. This is a desirable result, so the variable for college degree is hypothesized to have a significant negative impact on the authority scale. I used two-tailed hypothesis tests for all of the independent and control variables in the following analyses to ensure I can adequately identify any statistically significant effects, even those that were contrary to my hypotheses. A pre-service college degree does have a statistically significant impact in the expected direction. Officers that have a pre-service bachelor's degree are expected to decrease their authority scale value by .0566 (move .0566 units towards strongly disagree) holding all else constant. Using a y-standardized coefficient, having at least a pre-service bachelor's degree results in an expected decrease of .1528 standard deviations in the authority scale value holding all else constant. Thus, while the impact of a four-year degree is statistically significant, the magnitude of the effect is not particularly sizable. Three of the control variables also are statistically significant. Officers who are satisfied with their job on average have an authority score that is .1417 units lower holding all else constant. Patrol officers and officers who have received training in interpersonal skills have higher authority scale scores on average. The finding for interpersonal skills is surprising, because it seems logical that officers that have training

in interacting with citizens would hold less supportive attitudes regarding abuse of authority. These control variables all have larger y-standardized coefficients than the pre-service college education indicator. It is important to note that the model only explains 9.79 percent of the variance in the authority scale. I discuss the possible reasons for rather low variance explained in all of these models in the next chapter.

The results in Table 2 reflect the removal of age from the final model. As noted in the previous chapter, age was highly correlated with years of experience ($r = 0.88$), and an examination of variance inflation factors (VIF) and tolerance levels indicated that age and years had a tolerance of about 0.2 and a VIF of almost 5. These levels suggested the possibility of multicolinearity problems, so age was removed. With the removal of age, no variable had a VIF over 2 or a tolerance level below 0.5. The correlations between all variables remaining in the model were all under .50. This model also includes the currently married control variable. The model was re-run using the alternate marriage variable (have you ever been married?) and the results were similar and less variance was explained, so the currently married variable was chosen. In addition, I employed the survey regression feature in Stata. When the small and midsize departmental size controls were included in an initial model, both were statistically insignificant. The survey regression feature adjusts the standard errors downward by taking advantage of the greater homogeneity within department size strata compared to across strata. As noted in the previous chapter, survey regression also allows each officer to be properly weighted and accounts for the clustering of officers within departments. Thus, the linearized standard errors in the final model are adjusted for spatial autocorrelation. Standard tests of heteroscedasticity cannot be calculated when observations are weighted,

but the analysis was re-run without probability weights and using both a Breush-Pagan test (p = .542) and a White's test (p = .402) for heteroscedasticity, I failed to reject the null hypothesis that the data are homoscedastic. Thus, there appear to be no major problems with the OLS assumption of homoscedasticity.

Table 2: OLS results for testing the impact of an officer earning at least a pre-service bachelor's degree on the authority scale

Variable	***Beta***	***Linearized Std. Error***	***p-value***
PreCollege	-.0566	.0269	.037**
Male	-.0232	.0397	.560
Black	.0155	.0516	.765
Other	.0897	.0598	.136
Hispanic	.0648	.0556	.246
Kids	-.0045	.0255	.861
MarriedNow	-.0347	.0328	.293
Years	-.0006	.0018	.743
Patrol	.1102	.0291	.000***
Satisfied	-.1417	.0401	.001***
Interpersonal	.1109	.0349	.002***
Diversity	-.0263	.0336	.435
Ethics	.0385	.0254	.133
West	-.0195	.0395	.623
Northeast	.0129	.0389	.740
South	.0529	.0409	.199
COP	-.0610	.0518	.242
Constant	2.4876	.0983	.000***

** p < .10 ** p < .05 *** p < .01*
N = 845; R^2 = .0979; F = 4.26 (p = .0000)

The analysis in Table 2 was re-run using the imputed dataset, which resulted in no missing data for the dependent variable and a final sample of 886 due to missing data from the independent and control variables. I provide these results in Appendix D. There are no substantive differences using the imputed sample. All the same variables are statistically significant at the p < .05 level. Thus, the non-imputed sample will be considered the final model because these estimates are more conservative and based on actually observed data. The final sample for the analysis in Table 2 of 845 still represents

over 91 percent of the original data. In addition, I ran a logistic regression using whether or not an observation was missing for the authority scale as the dependent variable. None of the independent or control variables in the model were significant predictors at the $p < .10$ level and the model itself was not statistically significant ($F = .51$, $p = .9430$), indicating that none of the covariates used appear to be affecting the likelihood that a respondent would fail to answer all the questions used for the authority scale. Missing data were less of a problem for the second dependent variables (valid n = 905), so the original non-imputed sample will be used for all reported analyses.

In Table 3, I report the analysis used to test the second part of the first hypothesis, that officers with at least a pre-service bachelor's degree will be more likely to see potential abuse of authority scenarios as more serious situations that require intervention. Higher component scores indicate the officer was more likely to answer that they viewed these scenarios as serious, and they were more likely to report a fellow officer who engaged in these behaviors, although the specific coefficient values are not easily interpretable. As Table 3 indicates, there is not support for this hypothesis. The pre-service college variable is statistically insignificant ($p = .418$). In this model, I did not use the survey regression function, because in the initial model the binary variable for small departments was statistically significant. The analysis presented still includes probability weights and adjusts for clustering within departments. However, no adjustment to the standard errors were made for stratification. Five of the control variables were statistically significant at the .05 level. As in the previous model, the binary variables for patrol officers and job satisfaction were both statistically significant. Patrol officers were more likely to see the scenarios as less serious and were less likely to

view intervention as necessary compared to officers with a higher rank. Those officers who were satisfied with their jobs had the opposite reaction to the scenarios. Officers that were currently married had significantly higher scores on the scenario component, as did officers who had received prior training in diversity. Officers from small departments had higher component scores compared to officers from the largest departments (the reference group). A Wald test comparing small and midsize departments was statistically significant (F = 11.98; p = .0008), indicating that officers from small departments were significantly more likely to think the scenarios involved serious officer misconduct that should be reported compared to officers in larger departments.

Table 3: OLS results for testing the impact of an officer earning at least a pre-service bachelor's degree on the scenario component

Variable	***Beta***	***Robust Std. Error***	***p-value***
PreCollege	-.0668	.0821	.418
Male	-.1724	.1117	.126
Black	.1930	.1334	.151
Other	-.2427	.1540	.118
Hispanic	.1093	.1219	.372
Kids	-.0618	.0789	.433
MarriedNow	.2935	.0742	.000***
Years	.0084	.0047	.074*
Patrol	-.2781	.0772	.000***
Satisfied	.2996	.1202	.014**
Interpersonal	-.0038	.0767	.961
Diversity	.2703	.0940	.005***
Ethics	-.0345	.0694	.620
Small	.4175	.1419	.004***
Midsize	.0572	.1255	.649
West	.0589	.1356	.665
Northeast	-.0607	.1088	.578
South	.0698	.1068	.515
COP	.0834	.1125	.460
Constant	-.4370	.2417	.073*

** p < .10 ** p < .05 *** p < .01*
N = 883; R^2 = .0990; F = 6.16 (p = .0000)

As noted in the previous chapter, because I only extracted 56 percent of the variance in the scenario questions using the one principal component, I also used separate analyses of each question with multinomial logistic regression (Long, 1997). I constructed eight different multinomial logistic regression models using each of the four scenario questions in models with either pre-service bachelor's degree or current bachelor's degree predictors. The college variable was only statistically significant in the two models for the seriousness of officer conduct question in Scenario A. In both cases, the significant findings indicate officers with at least a bachelor's degree had greater odds of answering that the hypothetical behavior was not very serious or moderately serious compared to not serious, quite serious, or very serious. I do not deem this one set of significant findings to be of great substantive interest and believe the component scores provide an accurate assessment of the results.

To test Hypothesis 2, I replaced the pre-college variable with a current level of education variable. Thus, this college binary variable included both officers who earned a pre-service degree and officers who received a bachelor's degree (or higher) while already employed as a police officer. I hypothesized that this variable would not be statistically significant or if there was a significant impact, I believed it would be smaller in magnitude than the pre-service college education variable. The results for the impact of this new college variable on the authority scale are presented in Table 4. The results are contrary to Hypothesis 2, because having at least a bachelor's degree remains a statistically significant predictor of officer attitudes. Officers with at least a four-year degree have a scenario scale value that is .0626 lower compared to less educated officers, holding all else constant. Indeed, not only is the significant effect contrary to predictions,

the magnitude of the beta coefficient for the current college education variable is higher than the pre-service college education variable, although the magnitudes are not significantly different (F = 0.18, p = .6742) . The y-standardized coefficient is also larger (-.1690). I discuss possible reasons for this unexpected finding in the next chapter. The control variables for patrol officers, job satisfaction, and interpersonal skills training remain statistically significant with the same sign and similar magnitude.

Table 4: OLS results for testing the impact of an officer earning at least a bachelor's degree (either pre-service or while an officer) on the authority scale

Variable	***Beta***	***Linearized Std. Error***	***p-value***
College	-.0626	.0255	.016**
Male	-.0224	.0402	.579
Black	.0119	.0515	.818
Other	.0919	.0606	.132
Hispanic	.0630	.0557	.261
Kids	-.0064	.0258	.805
MarriedNow	-.0329	.0331	.323
Years	-.0002	.0018	.893
Patrol	.1052	.0293	.001***
Satisfied	-.1407	.0397	.001***
Interpersonal	.1081	.0347	.002***
Diversity	-.0279	.0340	.415
Ethics	.0368	.0254	.151
West	-.0182	.0401	.650
Northeast	.0146	.0390	.709
South	.0521	.0414	.210
COP	-0601	.0523	.253
Constant	2.4923	.0909	.000***

** p < .10 ** p < .05 *** p < .01*
N = 845; R^2 = .1000; F = 4.32 (p = .0000)

In Table 5, I present the results testing Hypothesis 2 for the scenario component. As before with the authority scale, I hypothesized that whatever impact college education had on answers to the scenario questions would decrease with the use of current college degree status. The college education variable in Table 5 is marginally statistically significant and the coefficient actually indicates an undesirable impact of education. This

finding should not be overstated, since the p-value is very close to .10, but the coefficient does indicate that officers who had at least a bachelor's degree at the time of the survey, actually saw the scenarios as less serious officer behavior and they were on average less likely to think fellow officers should be reported for such behavior. Table 5 along with Table 3 certainly suggest no beneficial impact of a four-year degree in terms of the scenario questions. The control variables for being currently married, working in patrol, job satisfaction, diversity training, and small departments all remained statistically significant with similar coefficients when using the current college education variable. Years of service was marginally statistically significant was officers with more years of service more likely to have higher scores on the scenario component.

Table 5: OLS results for testing the impact of an officer earning at least a bachelor's degree (either pre-service or while an officer) on the scenario component

Variable	***Beta***	***Robust Std. Error***	***p-value***
College	-.1190	.0709	.096*
Male	-.1727	.1122	.127
Black	.1842	.1339	.172
Other	-.2387	.1536	.123
Hispanic	.1010	.1225	.412
Kids	-.0649	.0796	.417
MarriedNow	.2957	.0738	.000***
Years	.0087	.0046	.061*
Patrol	-.2904	.0776	.000***
Satisfied	.2996	.1196	.014**
Interpersonal	-.0082	.0767	.915
Diversity	.2669	.0937	.005***
Ethics	-.0366	.0693	.598
Small	.4104	.1411	.004***
Midsize	.0645	.1255	.608
West	.0632	.1344	.639
Northeast	-.0567	.1077	.600
South	.0703	.1057	.507
COP	.0817	.1136	.473
Constant	-.4101	.2419	.093*

** $p < .10$ ** $p < .05$ *** $p < .01$*

$N = 883$; $R^2 = .1012$; $F = 6.31$ ($p = .0000$)

To test Hypothesis 3, I recoded the education variables to examine the impact of varying levels of postsecondary education. I used three binary variables: one for officer's that had received at least a pre-service bachelor's degree, one for officer's that received a pre-service associate's degree, and one for officer's that attended some college prior to joining the police service, but had no degree. These categories are thus mutually exclusive and high school graduates are the reference group. I present the impact these three variables have on the authority scale in Table 6. Based on my hypotheses, I predicted that the pre-service bachelor's degree would have the greatest impact. The results show that a pre-service bachelor's degree (or higher) is a significant predictor of officer abuse of authority attitudes. The pre-service any college variable, however, is also statistically significant. These comparisons are to officers with just a high school education. Wald tests indicate that I cannot reject the null hypothesis that the pre-service bachelor's degree and pre-service any college variables are the same in magnitude. The bachelor's degree variable is marginally significantly different from the pre-service associate's degree variable in magnitude ($F = 3.79$, $p = .054$), although the pre-service associate's degree variable is statistically insignificant. Both statistically significant college variables indicate that college education has a desirable impact on attitudes regarding abuse of authority. These results are confirmed by the y-standardized coefficients. Officers with at least a pre-service bachelor's degree compared to officers with only a high school diploma are expected to have an authority scale score that is .2712 standard deviations less holding all else constant. As in previous models using the authority scale, the patrol, job satisfaction, and interpersonal skills training variables are all statistically significant. The y-standardized coefficients indicate, however, that the

magnitudes of the statistically significant education variables are more comparable to the control variables in this model than in previous models. The y-standardized coefficient for patrol, for example, is just slightly larger in magnitude (although in the opposite direction) than pre-service bachelor's degree (.2752 compared to .2712). This indicates that officer higher education level is just as important a predictor of officer attitudes as rank in this model.

Table 6: OLS results for testing the impact of varying pre-service, postsecondary education levels on the authority scale

Variable	***Beta***	***Linearized Std. Error***	***p-value***
PreBachelor's	-.1005	.0309	.001***
PreAssociate's	-.0211	.0354	.552
PreAnyCollege	-.0992	.0303	.001***
Male	-.0323	.0390	.408
Black	.0246	.0511	.631
Other	.0936	.0502	.123
Hispanic	.0626	.0561	.267
Kids	-.0027	.0241	.911
MarriedNow	-.0322	.0325	.324
Years	-.0013	.0018	.478
Patrol	.1020	.0288	.001***
Satisfied	-.1310	.0407	.001***
Interpersonal	.1083	.0347	.002***
Diversity	-0310	.0336	.358
Ethics	.0313	.0256	.109
West	-.01433	.0389	.713
Northeast	.0086	.0387	.825
South	.0487	.0413	.241
COP	-.0604	.0538	.264
Constant	2.5484	.0962	.000***

** p < .10 ** p < .05 *** p < .01*
N = 845; R^2 = .1090; F = 3.81 (p = .0000)

In Table 7, I use the same three binary variables to examine their impact on the scenario component. As in previous models, higher education is not a statistically significant predictor of scenario component scores. The same set of statistically

significant control variables from previous scenario models (married now, patrol officer, job satisfaction, diversity training, small department) remain significant in this model.

Table 7: OLS results for testing the impact of various pre-service, postsecondary education levels on the scenario component

Variable	***Beta***	***Robust Std. Error***	***p-value***
PreBachelor's	-.1293	.1046	.219
PreAssociate's	-.0895	.1085	.411
PreAnyCollege	-.1080	.0995	.280
Male	-.1842	.1115	.101
Black	.1963	.1361	.152
Other	-.2367	.1539	.127
Hispanic	.0983	.1235	.427
Kids	-.0591	.0785	.453
MarriedNow	.2966	.0745	.000***
Years	.0073	.0048	.130
Patrol	-.2866	.0756	.000***
Satisfied	.2956	.1214	.016**
Interpersonal	-.0107	.0763	.889
Diversity	.2683	.0944	.005***
Ethics	-.0320	.0692	.645
Small	.4062	.1379	.004***
Midsize	.0566	.1234	.647
West	.0673	.1347	.618
Northeast	-.0675	.1082	.534
South	.0615	.1065	.565
COP	.0853	.1122	.449
Constant	-.3450	.2447	.161

** p < .10 ** p < .05 *** p < .01*
N = 883; R^2 = .1008; F = 7.09 (p = .0000)

To combine Hypotheses 2 and 3, the three education level binary variables were used with the current level of education data. The results for the authority scale are presented in Table 8. I only provide the beta coefficients for the education variables. None of the control variable coefficients or significance levels were substantively different from the model using pre-service education data. Using the current level of officer education, all three of the binary variables are statistically significant. Thus,

compared to officers with just a high school education, officers with any level of higher education have less favorable attitudes towards the abuse of police authority. The magnitude of the beta coefficient for bachelor's degree is largest, and it is marginally significantly larger than the coefficient for associate's degree ($F = 3.01$, $p = .085$). These findings stand in contrast to the pre-service education analysis in Table 6, where the variable for associate's degree was not statistically significant. The reason for this difference is not immediately clear.

The coefficient magnitudes are larger than the model using pre-service education, as are the y-standardized coefficients. Acquiring a bachelor's degree at any time compared to only having a high school education is expected to decrease the authority scale value by .4197 standard deviations holding all else constant. This is the largest y-standardized coefficient in magnitude in the entire model, surpassing even job satisfaction (-.4011), which had been the largest in all previous models analyzing the authority scale. Using, the unstandardized bachelor's degree beta coefficient of -.1556, if we had a hypothetical high school educated officer who was at the mean on the authority scale (2.3653), then a hypothetical officer with a bachelor's degree would be expected, on average, to have an authority scale value of 2.2097 holding all else constant. This represents about a 6.5 percent decrease in the authority scale value, which indicates a notable attitudinal difference.

Table 8: OLS results for testing the impact of various current, postsecondary education levels on the authority scale

Variable	***Beta***	***Linearized Std. Error***	***p-value***
Bachelor's	-.1556	.0351	.000***
Associate's	-.0900	.0393	.024***
Any College	-.1356	.0352	.000***

** p < .10 ** p < .05 *** p < .01*
N = 845; R^2 = .1133; F = 4.36 (p = .0000)

The analyses from Table 8 were replicated using the scenario component. I present these in Table 9. As in previous models, none of the postsecondary education variables were statistically significant.

Table 9: OLS results for testing the impact of various current, postsecondary education levels on the scenario component

Variable	***Beta***	***Robust Std. Error***	***p-value***
Bachelor's	-.1674	.1168	.155
Associate's	-.1126	.1145	.328
Any College	-.0309	.1177	.793

** p < .10 ** p < .05 *** p < .01*
N = 883; R^2 = .1023; F = 6.28 (p = .0000)

In sum, there was mixed support for this study's hypotheses. As hypothesized, officers with at least a pre-service bachelor's degree did have attitudes that were less favorable towards abusing their authority. However, I did not find this impact with the questions about abuse of authority scenarios. In addition, the impact of college education on the authority scale attitudes was not limited exclusively to pre-service four-year degrees. Contrary to predictions, officers with a four-year degree earned at any point had more desirable attitudes, as did officers who attended some college, but did not earn a degree. A pre-service associate's degree was not significantly related to authority attitudes, but when I included officers who completed an associate's degree at any point,

there was a statistically significant impact. I discuss possible reasons for these findings in the next chapter.

CHAPTER V: DISCUSSION

This study examined how higher education, and particularly the obtainment of a four-year degree, impacts police officer attitudes regarding abuse of authority. Prior research in this area has been somewhat limited, and the current study had the benefit of using survey data from a nationally representative sample of 925 officers from 113 police departments. I found that higher education does have an impact on at least certain attitudes regarding police abuse of authority, although the findings, as noted in the prior chapter, do not fully support the hypotheses of this study. There are three important issues to discuss related to these findings. First, I will explore why higher education at all levels impacted the attitude scale. Second, I will suggest reasons why higher education at any level did not have a significant impact on the scenario component. Finally, I will discuss the relevance of the control variables.

Contrary to my hypotheses, a pre-service four-year degree was not the only educational outcome that impacted attitudes. Based on prior research, I predicted that officers who received their college degree while they became officers would be influenced by the police culture and would not be as subject to any potential attitude change associated with college. Instead, when officers who had a four-year degree acquired at any point were lumped together, the effect of college on officer attitudes became slightly stronger. Therefore, it appears that post-service college education can also have an effect on attitudes. Officers may receive financial assistance from their department to acquire a degree (although the presence of assistance or incentives was not measured in this dataset). Thus, officers who receive a college degree after joining the police force may be individuals that wanted to attend college, but did not have the

financial resources to do so previously. As a result, these officers may be more susceptible to the potential positive influences of the college experience. This brings up a selection issue, because officers self-select to work towards a college degree after employment. Like the predispositional issues discussed previously (Hudzik, 1978), the officers that choose to attend college while a part of the police force may be different, regardless of whether they attend college or not. That is an issue I cannot properly address with the current data. Still, the results indicate that the impact of college education may be able to withstand the effects of police culture, workplace pressures, and other occupational influences. Although this finding was unexpected, it is encouraging in that it appears a college degree earned at any point can make a difference.

What was more surprising was the finding that any college experience and a currently held associate's degree had a positive impact on attitudes when comparing these officers to those with just a high school diploma. The associate's degree variable was not statistically significant for pre-service, but did become statistically significant when I examined everyone who had received an associate's degree at any point. The coefficients for the bachelor's degree and any college were consistently larger than the coefficient for associate's degree. It could be that those officers who attended some college did so in four-year programs. Thus, the bachelor's degree experience may have impacted their attitudes, even though they did not complete a four-year degree. This is just speculation, because I have no data on the college experiences of those who answered "some college." The associate's degree did not prove to be as powerful a predictor of attitudes as a four-year degree, but the large magnitude of the impact of attending some college was unexpected. One-third of officers answered that they had attended "some college," so

future research should unpack this vague concept and get an idea of the educational experiences of these officers. The results analyzing the authority scale show fairly strong evidence that postsecondary education has a beneficial impact on abuse of authority attitudes compared to just a high school diploma. This is significant because approximately 82 percent of police departments still require just a high school education (Hickman & Reaves, 2006). The results from Table 8 in particular indicate that any type of postsecondary education requirement could lead to more desirable abuse of authority attitudes from officers.

Second, contrary to my hypotheses, officers with a pre-service bachelor's degree did not see abuse of authority scenarios as more serious situations that require reporting the hypothetical officer involved. I also had null findings for other levels of education, but this was inline with my hypotheses. In fact, if anything, college education had a small undesirable impact on attitudes and hypothetical behavior in the scenario component, because the coefficients, while not statistically significant, were negative. It is not totally clear why the findings differed between the authority scale and the scenario question component. I am more confident in the results using the authority scale, however. The scale was made up of nine questions that held together well and tapped into multiple aspects of abuse of authority. The scenario component, on the other hand, was made up of two questions each from just two scenarios. The goal of this second dependent variable was to assess hypothetical behavior, but this variable may not have done this very effectively. The questions in the scenario component did not ask how the officer would have acted; instead, they focused on the officer's assessment of the seriousness of the scenario behavior and whether he or she would report a fellow officer

who engaged in such behavior. Thus, it could be that I used a poor measure of hypothetical behavior, and additional scenarios with more extensive questions could have been helpful. It also could be that college education is not strongly related to behaviors associated with the abuse of authority, which necessitates future research discussed below. Although I cannot ignore the null findings of the scenario component, because of its somewhat questionable ability to tap into behavior and its use of fewer attitudinal questions, the results using the scenario component should not overshadow the consistent positive results found using the authority scale.

Third, although not the primary focus of this study, some of the findings related to the control variables merit further discussion. As we might expect, officer rank and job satisfaction were consistently related to attitudes. It seems logical that officers who are satisfied with their job would have more desirable attitudes. It also makes sense that patrol officers would have less desirable attitudes than more highly ranked officers. We would anticipate that more highly ranked officers earned these promotions because they avoided abuse of authority situations, and these officers do less work on the streets and spend more time developing policy, so they may be more likely to express more idealistic views of policing. Officers who attend college may be doing so in part because they think it will aid them in receiving a promotion and a higher rank. It is possible then that education is serving as a proxy for officer desire for success. Still, this drive for success may be difficult to measure for departments, so in terms of recruitment strategies, recruiting those with a college education may be one way to identify individuals striving to be successful (this issue is revisited below). The marriage variable was statistically significant only for the scenario component, which lends some tentative support to the

idea that marriage may serve as a kind of calming influence that assuages attitudes conducive towards abuse of authority. It is also not clear why officers in small police departments had significantly higher scenario component scores. It is possible that the situations in the scenarios are particularly rare in small departments, and officers find such potential abuses of authority to be more serious. The department size variables did not have a statistically significant impact on the attitude scale. Diversity training also proved to have a desirable impact on the scenario component, although there was no effect on the attitude scale. In contrast, interpersonal skills training appears to have had a backfire effect, causing significantly less desirable attitudes on the authority scale. This could also be a result of officers with "bad" attitudes being forced to attend interpersonal skills training. The question, however, asked about whether officers received interpersonal skills training at the academy or in-service, so it is difficult to determine exactly when officers received their training. Police training in general, is incredibly understudied, so future research should further examine how training may impact these attitudes (National Research Council, 2004). The latest Bureau of Justice Statistics data on police training show that 83 percent of training academies use interpersonal skills training or mediation training, 98 percent use ethics training, and 95 percent have diversity training (Hickman, 2005). This is in stark contrast to the 18 percent of departments that require an educational requirement beyond a high school diploma (Hickman & Reaves, 2006). Only diversity training had any sort of beneficial impact in this study, so departments may want to further evaluate their training programs and potentially consider higher education requirements as an additional policy that appears to be just as effective or more effective than specialized training.

Implications for Policy and Practice

The results of the analyses from the previous chapter are relevant to both criminal justice policy and practice. Results indicate that higher education at any level has some beneficial impact on abuse of authority attitudes. These findings are not conclusive evidence that departments need to increase educational standards or require a four-year degree prior to hiring. Still, there is no evidence from these results that increased educational standards are unwarranted. Indeed, higher education proved to be just as an important predictor of attitudes, if not more important than specialized training. Avoiding abuse of authority situations tends to be a key priority of police agencies. Complaints about the abuse of authority or excessive use of force strain police-community relations and can be costly in terms of legal fees to defend civil cases and budget cuts caused by decreased government trust in the police (Worden, 1996). The results here make no claim that higher education can reduce abuse of authority behavior or cut legal costs for police agencies. Nevertheless, there is some promise here for postsecondary education.

Despite the positive impact of education on the authority scale, the educational attainment variables all failed to reach statistical significance when examining the questions related to the abuse of authority scenarios. Roberg and Bonn (2004), however, make the interesting argument that even if education does not have a proven statistical impact on officer performance, it may still be useful to increase educational standards, because a college education is so highly valued in U.S. society and because more Americans continue to earn postsecondary degrees. Even if performance is not altered, increased educational standards may bring greater prestige and respect to the field. Goldstein (1977) notes that a college education requirement would help erase the

misconception that being a police officer involves simple tasks that anyone could do. Similarly Bittner (1970: 83) argues in regards to degree requirements, "the main objective…is to abolish permanently the idea that is all too prevalent in our society that if one does not want to take the trouble of becoming something worthwhile, he can always become a cop." These arguments are not based on statistically significant regression coefficients, but instead rely on the general prestige attached with professions. As Fyfe and colleagues (1997) point out, police have a great deal of discretion and frequently work unsupervised, much like teachers, and they also make decisions that affect the lives of citizens, much like prosecutors and judges. Yet, while these professions require a college degree (and an advanced degree for law), policing lags behind. Fyfe et al. (1997: 287) lament that police, as public servants, are often "lumped together with firefighters and sanitation workers." The authors point out that policing requires much more higher-level thinking and "the only real similarities between them and policing are irregular hours, danger, and uniforms." These arguments do not mean that empirical research is not necessary, but it is important to consider these other issues relevant to police educational requirements. While the findings here do not point to the necessity of requiring postsecondary education for police officers, they do point to one area where such a requirement may have some quantifiable benefits, in addition to the more general potential benefits for the profession noted above. Even if departments decide not to require higher education, these results indicate that recruiting potential officers with more education may be advantageous in terms of bringing in officers with less supportive attitudes regarding abuse of authority.

Finally, this study has a theoretical contribution to make as well. By assessing whether officers who received a college education have less supportive attitudes towards the abuse of police authority, this study served as a partial test of Durkheim's (1961) theory of moral education. Durkheim was not writing in particular about college education, but his arguments on morality are applicable to understanding how college education may impact police officer attitudes. The results presented in the previous chapter give some credence to Durkheim's belief that education plays an important role in instilling morality in society. I do not want to overstate my ability to assess Durkheim's arguments with this study, but the results do indicate that the attitudes of officers with higher education are more likely to be in accord with Durkheim's (1961) conception of morality.

Limitations of the Study and Future Research

This study does suffer from some limitations. The major concern is that there are likely important omitted variables in the model not included in the dataset. This is especially likely since none of the models included in the previous chapter explained much more than 10 percent of the variance in each of the dependent variables. As mentioned before, I was unable to control for potentially important departmental level variables, because the data linking a respondent to a particular department were destroyed. Thus, possibly important factors that could influence an individual officer's attitudes, such as department policies on the use of force and city demographic factors, cannot be controlled for. Since officers are nested within departments, additional departmental data would be ideal to allow for the use of multilevel modeling techniques, such as hierarchical linear modeling (Raudenbush & Bryk, 2002). In addition, as noted

earlier, the predisposition issue remains a concern (Hudzik, 1978). Individuals who attend college may be different regardless of whether they go to college or not. Evidence suggests that college itself does have a distinct impact on moral reasoning and moral behavior (Pascarella & Terenzini, 2005), but I have no extensive pre-college data to examine what college-educated officers were like before they went to school. It is important to consider Worden's (1990: 569) reminder that, "if college-educated recruits differ in the expected ways from other officers, the source of the difference is irrelevant for some policy purposes; whatever the reasons for the differences, it might be desirable to recruit college graduates." In other words, departments cannot recruit or hire based on a predisposition, but a college degree is a tangible way for departments to assess these potential benefits, even if the benefits were not caused directly by attending college. I also do not have extensive data on the higher education experience of officers. That is, I do not know where the officers attended school, if they were full-time or part-time students, if they lived on campus, and what kind of classes they took. The results in this study seem to indicate, however, that these factors may not be particularly relevant. For example, results did not vary between pre-service (which was more likely full-time) and during service education (which likely was part-time). Still, it is possible that the components of the college experience have an impact on attitudes. Thus, omitted variable bias is a concern that could be causing model misspecification. Still, the analyses presented here include all possible relevant controls based on the data and these controls are more extensive than most prior research. Finally, with the current data, I cannot determine if the attitudes officers express in the survey translate to specific behaviors related to the use of force. Since situational factors affect officer use of force

behavior (Worden, 1996), questions that assess general attitudes may not effectively tap into the situational aspect of force use. Still, attitudes are an important avenue for study and are much easier to assess than officer abuse of authority behavior.

These limitations provide an impetus for future research in this area. As noted in the second chapter, the literature on the impact of higher education is mixed and somewhat limited, particularly studies that examine attitudes regarding abuse of authority. Future research should endeavor to continue to study the impact of higher education using more extensive data that will address some of the issues noted in the previous paragraph. In particular, future datasets should include questions regarding the college experience for college-educated officers. The more we know about what college was like for an officer, the more successful we will be at isolating factors that may matter most. In addition, we need data on pre-education background characteristics of officers. These would include family socioeconomic status, parental occupations, and parental educational backgrounds. Questions that examined why an individual did or did not attend college would be very beneficial. An ideal study would also use this survey or interview data on background characteristics and attitudes and combine it with behavioral measures, such as direct observation or analysis of official complaint data. A multi-method study would provide a better assessment of the impact of education (and other potentially relevant factors) on both attitudes and behavior. Thus, future research should strive to better address the predisposition issue associated with all prior research on college education in policing, and should make efforts to better link attitudes and behaviors in exploring how postsecondary education does (or does not) affect police abuse of authority. Continued efforts should be made to use large samples of officers

from multiple departments when possible. While survey research is a promising avenue for the future, a randomized experiment is also potentially possible. Officers could be randomly assigned to receive subsidized education while employed in the police service. An experimental design, while not likely an easy sell to police departments, would address many of the predisposition issues noted above.

Conclusions

The findings here suggest that higher education does have some positive impact on police officer attitudes regarding police abuse of authority. The results do not point to a particular type of education or a particular time of degree acquirement that completely explains this impact, although it does appear that a bachelor's degree has more of an effect than an associate's degree. This result appeared for more general attitudes related to abuse of authority, but not for questions about specific hypothetical scenarios. The somewhat mixed findings and limitations noted above make clear the need for future research in this area. Nonetheless, this study has the major benefit of using a nationally representative sample that asked a variety of questions about police use of authority. These findings are generalizable to the universe of United States police officers. No other police education or abuse of authority sample has produced findings that generalize so widely. I was also able to examine different educational outcomes, different times of degree acquirement, and a variety of demographic and work-related controls. The results here are not entirely conclusive and future empirical research is needed to further explore how higher education affects police officer attitudes and the policing profession more generally. Still, this study is an important addition to the very limited literature on how higher education impacts police officer attitudes associated with abuse of authority.

APPENDICES

APPENDIX A: AUTHORITY SCALE QUESTIONS

Questions used to create the authority scale (all questions had the following possible answer choices: strongly agree, agree, disagree, strongly disagree)
For all questions, possible values range from 1-4. 1 corresponds to "strongly disagree" and 4 corresponds to "strongly agree."

Question	*Observations*	*Mean*	*Std. Dev.*
"Police officers are not permitted to use as much force as is often necessary in making arrests."	912	2.2851	0.7043
"Police officers should be allowed to use physical force in response to verbal abuse."	920	1.8152	0.5545
"It is sometimes acceptable to use more force than is legally allowable to control someone who physically assaults an officer."	912	2.0724	0.7343
"Whistle blowing is not worth it."	904	2.1571	0.6569
"Police department rules about the use of force should not be any stricter than required by law."	915	2.7049	0.6191
"Always following the rules is not compatible with getting the job done."	919	2.3906	0.6850
"The code of silence is an essential part of the mutual trust necessary to good policing."	905	2.0055	0.6159
"The public is too concerned with police brutality."	918	2.6612	0.7411
"The newspapers and TV in this country are too concerned with police brutality."	920	3.1554	0.7484

APPENDIX B: FULL-TEXT OF SCENARIOS

Full-text of the scenarios presented to officers in the second section of the survey is presented below. Officers were randomly assigned to hear one of the versions of the first scenario and all heard the same second scenario. Responses to these surveys are used to create the scenario component for the second dependent variable.

First Scenario, Version A
While patrolling his beat, an officer notices several youths standing on a corner smoking cigarettes and talking to one another. The officer tells the youths to break it up and leave the area. The youths say, "We're not doing anything. Why are you hassling us?". The officer gets out of the car and orders the youths to place their hands up against the wall of a building. They refuse. The officer throws them against the wall and searches them. Finding nothing, the officer uses demeaning language, tells them that this "will teach you to respect the law" and "I'd better not see you here again," and gets in his patrol car and drives off."

First Scenario, Version B
In a community meeting, citizens told police that they were very concerned about groups of rowdy youths hanging out on street corners. After the meeting, an officer who participated in the meeting notices several youths standing on a corner smoking cigarettes and talking to one another. The officer tells the youths to break it up and leave the area. The youths say, "We're not doing anything. Why are you hassling us?". The officer gets out of the car and orders the youths to place their hands up against the wall of a building. They refuse. The officer throws them against the wall, and searches them. Finding nothing, the officer uses demeaning language, tells them that this "will teach you to respect the law" and "I'd better not see you here again," and gets in his patrol car and drives off.

Second Scenario
An officer has a handcuffed suspect sitting at his desk while he fills out the necessary paperwork. With no provocation from the officer, the suspect suddenly spits in the face of the officer. The officer immediately pushes the suspect in the face, causing the suspect to fall from the chair onto the floor.

APPENDIX C: DESCRIPTIVE STATISTICS

Table of descriptive statistics for independent, dependent, and control variables

Variable	*# of Obs.*	*Mean*	*Std. Dev.*	*Minimum*	*Maximum*
Main Independent Variables					
PreCollege	924	0.2359	0.4248	0	1
College	924	0.3344	0.4720	0	1
PreBachelor's	924	0.2359	0.4248	0	1
PreAssociate's	924	0.1461	.3534	0	1
PreAnyCollege	924	0.2825	.4504	0	1
Bachelor's	924	0.3344	0.4720	0	1
Associate's	924	0.1883	0.3912	0	1
AnyCollege	924	0.3279	0.4697	0	1
Dependent Variables					
Authority	861	2.3653	0.3704	1.1111	3.6667
Scenario	905	0	1	-2.5160	1.7176
Scenario ?s:					
Serious A	920	3.8239	1.0024	1	5
Report A	912	2.8794	0.9731	1	4
Serious B	914	2.9726	1.2785	1	5
Report B	914	2.5908	1.1110	1	4
Control Variables					
Male	924	0.9177	0.2749	0	1
Black	921	0.1020	0.3029	0	1
Other	921	0.0858	0.2802	0	1
Hispanic	922	0.0911	0.2879	0	1
Age*	922	37.7299	8.7187	22	66
Kids	920	0.5708	0.4952	0	1
EverMarried	922	0.8622	0.3448	0	1
MarriedNow	922	0.7397	0.4390	0	1
Years	924	12.8561	8.4570	0	38
Patrol	924	0.5563	0.4971	0	1
Satisfied	923	0.9155	0.2783	0	1
Interpersonal	919	0.7421	0.4377	0	1
Diversity	923	0.8797	0.4377	0	1
Ethics	917	0.6314	0.4827	0	1
Small	925	0.1232	0.3289	0	1
Midsize	925	0.7059	0.4559	0	1
West	925	0.1978	0.3986	0	1
Northeast	925	0.2541	0.4356	0	1
South	925	0.3416	0.4745	0	1
COP	921	0.9316	0.2526	0	1

Key:

Main Independent Variables:

PreCollege: respondent had at least a bachelor's (four-year) degree before becoming a police officer

College: respondent had at least a bachelor's (four-year) degree at the time the survey was administered

PreBachelor's: respondent had at least a bachelor's (four-year) degree before becoming a police officer

PreAssociate's: respondent had an associate's (two-year) degree before becoming a police officer

PreAnyCollege: respondent had attended some college (but had no degree) before becoming a police officer

Bachelor's: respondent had at least a bachelor's (four-year) degree at the time the survey was administered

Associate's: respondent had an associate's (two-year) degree at the time the survey was administered

AnyCollege: respondent had attended some college (but had no degree) at the time the survey was administered

Dependent Variables:

Authority: nine-item authority scale (items summed and averaged)

Scenario: component scores from the principal component analysis

Scenario ?s: four questions from the two scenarios

Serious A: how serious the respondent thought the officer's behavior was in scenario A (1= not serious at all; 5= very serious)

Report A: if a respondent said he or she would report an officer who engaged in the behavior in scenario A (1=definitely not; 4=definitely yes)

Serious B: how serious the respondent thought the officer's behavior was in scenario B

Report B: if a respondent said he or she would report an officer who engaged in the behavior in scenario B

Control Variables (Other Independent Variables):

Black: respondent is black

Other: respondent is neither black nor white; identifies as one of the following: American Indian or Alaskan Native, Asian, Native Hawaiian or Pacific Islander, other, mixed race

Hispanic: respondent is of Hispanic, Latino, or Spanish origin

Male: respondent is male

Age*: respondent's age in years- not included in the final model because of its high correlation with years of experience

Kids: respondent has at least one dependent child under 18

EverMarried: respondent is currently married or living with someone as married or is currently widowed, divorced, or separated

MarriedNow: respondent is married or living with someone as married

Years: number of years of experience as an officer respondent has

Patrol: respondent's rank is patrol

Satisfied: respondent is satisfied with his/her job

Interpersonal: respondent has taken a class in interpersonal skills or interpersonal relations in the training academy or sometime since becoming a police officer
Diversity: respondent has taken a class in human diversity, cultural differences, cultural awareness, or ethnic sensitivity in the training academy or sometime since becoming a police officer
Ethics: respondent has taken a separate class in ethics in the training academy or sometime since becoming a police officer
Small: respondent's department is small (10-24 full time officers)
Midsize: respondent's department is midsized (25 or more full time officers, but not among the nine largest in the nation)
West: respondent's department is located in the Western United States (see footnote 2 for a list of states by region)
South: respondent's department is located in the Southern United States
Northeast: respondent's department is located in the Northeastern United States
COP: respondent's department is involved in community-oriented policing

APPENDIX D: MISSING DATA ANALYSIS

Missing data analysis using imputed dataset to examine whether the impact of a pre-service bachelor's degree varies with a larger set of observations. The N in this analysis increased to 886 (from 845 in Table 2). However, the coefficients were not greatly altered. Two variables (other race and ethics training) reached marginal statistical significance, but the substantive findings did not change.

OLS results for testing the impact of a pre-service bachelor's degree on the authority scale using imputed data

Variable	***Beta***	***Linearized Std. Error***	***p-value***
PreCollege	-.0604	.0250	.017**
Male	-.0203	.0379	.593
Black	.0182	.0490	.710
Other	.0983	.0578	.092*
Hispanic	.0656	.0541	.228
Kids	.0031	.0242	.900
MarriedNow	-.0434	.0318	.174
Years	-.0002	.0018	.896
Patrol	.1212	.0288	.000***
Satisfied	-.1337	.0380	.001***
Interpersonal	.1053	.0333	.002***
Diversity	-.0246	.0322	.446
Ethics	.0428	.0241	.078*
West	-.0178	.0406	.662
Northeast	.0181	.0375	.630
South	.0575	.0409	.154
COP	.0301	.0301	.321
Constant	2.3943	.0621	.000***

** $p < .10$ ** $p < .05$ *** $p < .01$*
$N = 886$; $R^2 = .1014$

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