ABSTRACT

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Terrorist groups do not operate in isolation. To survive in the face of counter-pressures from their opponents, the group must establish a beneficial relationship with a targeted audience, a presumed constituency, in order to generate the sympathy and support necessary for maintaining operational viability. Existing studies of terrorism, however, offer few insights into how this might be done. The most common approach revolves around assessments of terrorist messages, yet typically treats those messages as self-serving propaganda or media manipulation. This study takes a different approach, suggesting that terrorists use statements and communiqués in an effort to gain and maintain a supportive audience. Further, the intended audience for the messages infer meaning in terrorist violence, thus augmenting or reducing the impact of persuasive messaging by the terrorist. Understanding this process, in turn, may yield new insights into the dynamic processes of terrorism, offering new opportunities

to assess a terrorist group's potential for positive evolutionary growth or greater relative fitness.

Using Grunig's situational theory of publics, this study creates and evaluates a new metric, called expected affinity, for examining the terrorist group's effort to establish and strengthen bonds between itself and its targeted and presumptively supportive audience. Expected affinity combines sub-measures addressing problem recognition, expected and desired levels of involvement, and constraint recognition, coupled with an inferred meaning in the symbolism of violent acts in order to evaluate terrorist messages and attacks. The results suggest utility in the expected affinity metric and point to opportunities for making the measure more directly applicable to specific cases through incorporation of detailed case study data.

TERRORISM'S COMMUNICATIVE DYNAMIC: LEVERAGING THE
TERRORIST – AUDIENCE RELATIONSHIP TO ASSESS EVOLUTIONARY
TRAJECTORIES.

By

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Chapter 1: At an Impasse

Without a radical change in perspective, terrorism studies, as a discipline, may have few insights and little analytic progress left to offer. The field has approached the limits of what it can say about the dynamics of terrorism. Maintaining present analytic and methodological perspectives leaves the field with little more than opportunities to fine-tune the present state of knowledge, limited largely to a strict focus on selected subelements of the phenomenon. These fine-tuning opportunities, further, are generally limited to specific terrorist groups or to very narrowly defined terrorist group types. As analyses get more detailed and specific with respect to terrorism subelements, the larger focus is lost, leaving behind a field in which inquiry nibbles at the edges rather than offering generalizable explanations and predictive analyses.

As a result of this limited perspective, the typical approach taken in terrorism studies places severe limits, if not outright barriers, to the field's ability to offer new knowledge and understanding of the *process* of terrorism. Restricting the field to select aspects does allow for the isolation and subsequent careful examination of a select element, both essential elements of inquiry. It also serves to curtail opportunities to generalize findings beyond the immediate subject entity, to understand the fundamental aspects of the phenomenon, and to offer broader and more accurate predictive forecasts. Rather than expand the field's capabilities by venturing into the unknown, more examinations fall back on well documented, widely accepted, fully validated methodological practices centered around the

deconstruction of terrorism and terrorist groups into easily analytically isolated and quantifiable components. An understanding of the dynamics of terrorism, its processes, and its evolutionary tendencies born of interaction between terrorist, opponent, and audience is lost.

The National Commission on Terrorist Attacks upon the United States, commonly referred to as the 9-11 Commission, called this failure one of imagination.[1] In applying that label, and by identifying this failure as one of the primary venues for corrective action, the Commission highlighted the narrow approach, firmly fixed in the here and now that characterizes the study of terrorism, both in academia and in government. It is, as the Commission suggests, an approach rooted in the reductive. Terrorism studies is a relatively new field, still considered immature by some, in search of recognition and legitimization as a mature discipline (Gordon 2004: 107). While this may explain and excuse the field's failings for some, others are less charitable, with one observer arguing that a research community of scholars can remain active indefinitely while making no real contribution to the body of knowledge (Silke 2004a: 2). Andrew Silke continued his criticism by noting that "It seems relatively clear that terrorism research exists in such a state and that after over 30 years of inquiry, the field shows little evidence it is capable of making the leap to consistency producing research of genuine explanatory and predictive value." (Silke 2004a: 2) Terrorism studies are, unfortunately, dominated by what have been dubbed "integrators of literature," (Silke 2001: 5) where findings repackage arguments made previously by others, resulting in a conceptually incestuous field.

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[1] National Commission on Terrorist Attacks upon the United States (2002), *The 9-11 Commission Report*. See especially Chapter 11, "Foresight – and Hindsight," pp. 339-348, in which the Commission discusses failures of imagination in detail.

Much of the difficulty encountered in the field stems from the nature of terrorism. It is a highly emotional phenomenon, igniting deeply held passions across a wide range of interpretive perspectives. It carried with it a fundamental sense of immediacy, if not urgency, sometimes bordering, sometimes giving in to panic. The heavy emotional context of terrorism provides a powerful attractor, and almost irresistible conceptual context, leading easily and almost naturally to research centered on immediate issues, symptoms, and solutions (Silke 2004b: 210-211). The imminent threat offered by terrorists, and at times by the fear of terrorism itself, quite naturally drive policy makers toward a simpler indications-and-warning perspective in which the reduction of the threat becomes the paramount concern. More time-consuming inquiry into historical development and fundamental causal factors of terrorism, as well as its dynamics, are subordinated to immediate threat reduction and mitigation. Terrorism research in academia follows suit, providing products overwhelmingly focused on the present (Weinberg and Richardson 2004: 138; Crenshaw 2000: 410-411; Medd and Goldstein 1997: 281; and Rapoport 1997: 12 among others).

Terrorism, by its very nature, is clandestine, further limiting opportunities for scholarly inquiry. Terrorists and the governments they oppose engage in a merciless, protracted, violent struggle, leading the terrorist to place organization or ideology, if not also the individual, at or near the pinnacle of their goals and objectives. Outside researchers seeking entry into the world of the terrorist risks violence from both directions – from the terrorist suspicious of researcher motive and governmental ties, to government equating real or presumed coziness with terrorists as support, alliance,

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and assistance. Because of the inherent danger involved in accessing clandestine extra-legal organizations, most research is done from afar, with little or no contact between researchers and their subjects. This leaves few opportunities to gather unbiased, unmanipulated data, particularly with respect to terrorist motivations, goals, objectives, and perspectives. Research is left with often-questionable materials consciously manipulated by its originator to convey a desired message – a message that may have widely varying degrees of accuracy, completeness, and veracity.

The dearth of unbiased and complete data frequently forces the analyst to rely on the work of others, his or her own potentially biased interpretations,[2] and familiar perceptual contexts. Terrorism is, by most definitions, abnormal or anti-social behavior,[3] yet researchers often seek to understand it within familiar behavioral contexts. By doing so, sight is lost of many of the critical elements of the process and dynamics of terrorism, the interactions that define the relationships between actors. Robert Jervis, discussing deterrence but in a way equally applicable to terrorism studies, notes that

> In explaining outcomes, we are prone to examine one side's behavior and overlook the stance of the other with which it is interacting. Although deterrence theory is built on the idea of interdependent decisions, most explanations of why deterrence succeeds in some cases and fails in others focus on differences in what the defender did while ignoring variation in the power and motivation of the challenger, just as much policy analysis generally starts – and often ends – with the strengths and weaknesses of the policies contemplated and adopted. (Jervis 1998: 241)

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[2] Particularly in the case of research focused on terrorism prevention, mitigation, or counterterrorism, where the author is predisposed by focus to find the undesirable and hostile in their subject.

[3] *Terrorism*, as used in this paper, is taken to mean violence, or the threat of violence, Undertaken by non-state actors, designed to produce fear and change or modify behaviors, and targeted primarily against non-combatants for political and social purposes rather than for economic gain. The "audience" for terrorist violence is larger and distinct from the immediate victims, although the immediate victims can be part of the intended audience.

The models used in the study of terrorism are much like the models used throughout the social sciences. These models disaggregate the subject of study and subject the components of the system to several conceptual limitations largely divorced from reality. These models assume, largely for ease of analysis, that the constituent actors have complete and unfettered access to all relevant information. Not only do the models typically used assume a degree on omniscience on the part of the actors involved, those actors are assumed to process that information with complete fidelity and to use exacting and generally infallible processes that drive the actor toward optimization. The models also assume that the actors act accordingly, avoiding to the extent possible those actions which lead away from situational optimization. The qualities are often considered to represent the essence of scientific modeling, taking the rich and varied reality found, identifying the essential elements, and crafting features and variables for use in the model to match those critical elements (Miller and Page 2007: 30-37).[4] Unfortunately, that approach has prevented scholars from thoroughly exploring the richness and complexity of terrorism's interactive nature since emphasis has remained firmly rooted on the actors and their characteristics rather than on their interrelationships with other actors and the environment.

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[4] Miller and Page (2007: 40) continue the thought, noting "A model requires choices of both the equivalence classes and the transitional function, and the art of modeling lies in judicious choices of both. For any given real-world problem, there are likely to be multiple equivalence mappings (and associated transition functions) that will result in homomorphisms. The value of any particular set of choices depends on the current needs of the modeler. Moreover, the difficulty of discovering the model's transition function will be closely tied to the chosen equivalence mapping, and thus modelers must make trade-offs between the two elements. Choosing an overly broad set of equivalence classes simplifies the task of finding an appropriate transition function, $f(s),$ leading to a homomorphism, but at the cost o lowering the model's resolution and value."

At present, terrorism studies are also much like deterrence studies, as portrayed by Jervis. A complex interactive phenomenon is disaggregated into selected constituent components as a strategy for analysis. Terrorism is reduced to isolated elements, with the study of those elements offered as substitutes or models for complex, interactive phenomena. Yet the essence of terrorism lies in the interaction between individuals and groups, revolving around violence or the threat of violence, firmly focused on the resulting emotional impact produced. The study of terrorism seeks to build an understanding of the whole phenomenon through an understanding of its constituent parts, even though this approach is demonstrably inadequate.[5] The reductionist approach taken in most terrorism studies leads naturally to a conceptualization of terrorism as a zero-sum adversarial relationship between terrorist and opponent. Labeling in terrorist situations, for example, assumes a critical role between terrorist and adversary. Each seeks support, sympathy, and often assistance from a larger public, leading both sets of antagonists to claim, through labels applied, a moral and ethical high ground for their actions (Cordes 2001: 150). This war of labels is seen as a contest between the terrorist and his adversary for the affections of a static, finite public such that gains by one side necessarily equals a commensurate loss by the other. This conceptual framework is enhanced further by the black-and-white exclusionary language used by both the government and the terrorist in discussing the conflict (see, for example Ilardi 2004: 216-218).

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[5] Evolutionary biologist Brian Goodwin offers an applicable analogy when stating that knowing the structure of water molecules offers no insight into the question of why it goes down the drain in a vortex. Intimate knowledge of the parts says nothing about behavior. Goodwin suggests that we reverse our thinking and argues "we need a concept of the whole organization . . . as the fundamental entity . . . and then understand how this generates parts that conform to its intrinsic order." Quoted in Lewin (1999: 35).

Lacking an operative sense of fluid dynamics in terrorism's interactive nature, terrorism studies are often predicated on an assumption of perfect or near-perfect agent rationality. Both terrorists and their opponents are commonly depicted as capable of effective cost-benefit analysis, resulting in decisions reflecting the greatest possible optimization of benefit at a given acceptable level of loss. Studies typically overlook, downplay, or ignore emotion and reflex as operative triggers for action. Unusual or unexpected actions are usually couched in terms of new strategic or tactical directions conceived and implemented to advance established goals, or effectively dismissed as single-occurrence anomalies.[6] Similarly, interaction between presumed rational actors dictates a follow-on assumption that the interaction between terrorist and their adversary is a rather simple cause-and-effect relationship. Actions by one antagonist produce reactions and counteractions by the other, which in turn directly generate more reactions and counteractions, *ad nauseum*. The results of such single factor focus, reductionist perspective, and assumption of agent rationality are, as Jervis (1997: 42-43) notes, frequent sources of analytic error.

The Dilemma

Knowing the local rules of interaction and behavior is essential. Detailed knowledge limited to actors, their make-up, motivations, and capabilities offers little of universal application. Knowing these things – the products of the reductionist approach – is nevertheless critical to further development of the field. Put into a broader context, one moving beyond the strict spatial and temporal confines of the

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[6] For a more nuanced discussion in a larger, broader context, see Holland (1995: 85).

immediate, terrorism is a dynamical system in which local rules and behaviors generate a system level order not predictable from agent and environmental knowledge alone. Terrorism, like other dynamical systems, exhibits emergent properties, toward which and into the field needs to grow. Terrorism does not exist in a vacuum, and its study should "go beyond a concentration on current events or speculation about the future to develop systematic analyses of the development of the phenomenon over time. . . ." (Crenshaw 2000: 415).[7] Arguing for such a new approach in order to ward off stagnation, Ilardi suggests

> In addition to its apparent failure to achieve the primary objectives – and there is little evidence to indicate the contrary – the prescriptive focus of terrorism researchers has also diverted attention from other critical matters, not the least of which is the development of a sound theoretical understanding of the dynamics of terrorism. One can also add to this a continued tendency to produce research whose methods are questionable, no doubt largely due to the perceived need to produce 'policy-relevant' material in a timely fashion; and, perhaps for the same reason, a widespread inability to identify and exploit original information sources. . . . The result has been a spiralling [sic] of the literature that in the end adds little to our overall understanding of terrorism.
> . . . There exists a clear and present need for terrorism researchers to focus their collective energies upon the critical goal of understanding the dynamics of terrorism, including its root causes, taking into particular account the role of culture and history in explaining contemporary behavior and motivations. In other words, adopting an emphatic approach to the analysis of terrorism by acknowledging the interconnectedness and true complexity of events. This process calls for the addition, rather than the reduction, of variables in the study of terrorism. (Ilardi 2004: 215).

Taking development in the field too far in that direction, however, is equally problematic. Terrorism researchers could assume, for example, that terrorism's interactive nature is essentially random, unpredictable, and chaotic. Were such an

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[7] Tololyan (2001: 227) makes a similar argument in writing ". . . it is reductive and finally inadequate to think of terrorist acts as only a political response to political facts, past or present. Neither political nor psychological explanations can compensate for a lack of analysis of the cultural milieu that provides the medium in which political facts are interpreted and engender new acts."

assumption accurate, it would immediately give rise to a variety of analytic difficulties such as the apparent arbitrariness of outcomes, the inability to achieve problem resolution through disaggregation, an inability to address system instability, and a loss of opportunity to develop reasonable predictive assessments (Richards 1997: 112-113). The problem, then, lies in finding a cognitive and paradigmatic balance between the reductionist and the chaotic. Approaches rooted in the simplistic cause-and-effect idealization and isolation of system components, firmly fixed in deterministic laws and processes, as Beyerchen (1998: 184) notes, offer the essence of good theory. Yet terrorism as a process is complex, ever-evolving, anything but static or linearly deterministic, leaving the field to either remain with solidly grounded, if uninspired and redundant work, or to push forward into newer applications and approaches, developing the theory and the methods along the way.

Terrorism, though, is neither truly linear nor chaotic. Rather, it lies on the border between the two, not in stasis but not yet over the line into the realm of chaos. The phenomenon occupies that transition space called complexity. To label terrorism a complex system, however, may be a bit of a misnomer unless it can be clearly articulated that complexity implies a system which is different from the sum of its parts, rather than simply being greater than that sum (Jervis 1997: 12-13).[8] As a complex system, terrorism is not amenable to a reductionist approach, even if that forms the overwhelming majority of decades of scholarship in the field (Ilardi 2004: 226). A new approach is needed, one which begins to nudge the field away from the reductionist perspective of today towards a more holistic, system- and function-

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[8] See also Waldrup (1992: 293), especially Langston's explanation of the difference between chaos, order, and complexity.

focused approach that embraces the fluidity, adaptiveness, and interactive propensities of the process.

Terrorism is, in short, coevolutionary and adaptive. It is an open system in which resource or process inputs, generated internally or externally, offer the possibility and potential for inducing significant system-wide evolutionary change.[9] Major inputs can have little apparent impact on system dynamics, while minor or seemingly insignificant inputs can result in fundamental and far-reaching changes to structure, process, and trajectory. Component behaviors within the system are the products of interaction between components, and of interactions between components and their environments.[10] The impact of terrorism is often characterized by defining the methods of attack and the kinetic outcomes achieved, usually in terms of casualties and property damage. This, however, misses the essence of terrorism, which lies in the emotional impact which results from both violent action and the fear of future violence. Even though terrorist attacks cause tremendous physical destruction to persons and property, it is the associated emotional response and reaction which define the lasting phenomenological "damage" brought about by a terrorist act. Terrorism, as a result, is more appropriately characterized and defined by the perception of outcome. If terrorism is considered in terms of power alone, which is the typical approach, it is correctly characterized only with the understanding that

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[9] This lies in contrast to closed systems, which form the conceptual models for almost all terrorism work, particularly work rooted in a reductionist approach. Closed systems perspectives use the mental construct of isolation of the system or subsystem – conceptually assuming no interaction between examined system and its environment – in order to frame the research arena. While conceptually isolating a system for examination is essential for understanding the content and function of that being examined, it does so by constructing an artificial paradigm that can, at best, only attempt to mirror selected aspects of the system and its components. Conceptual isolation for examination has proven vital for reducing the "real world" to manageable proportions.

[10] For a more detailed discussion in an international relations context, see especially Jervis (1997).

the amount of power exhibited is determined not by those who are seen as wielding it, but by those seen as subject to its use. The recipient, in deciding what degree to acquiesce, effectively determines how much power the other holds.[11]

The analytic perspective of terrorism needs to shift away from the linear. Linearity assumes endpoints, times and conditions in which beginnings and ends can be authoritatively identified. Temporal timelines of specific terrorist groups can be, and often are, used to illustrate and frame violent struggles. It is true that all terrorist groups have an identifiable beginning, and that most so far have had an identifiable end, but the focus on temporality overlooks the miasma of emotions, hatreds, fears, and grievances that give rise to violent struggle and often characterize the varying degrees of outcomes. Behavior, and the emotions that dictate their direction, have no endpoints. Rather, behavior is a manifestation of reciprocity and dynamism (Taylor and Horgan 2001: 53), an on-going process that constantly evolves with behavior changing both structure and environment and both environment and structure changing behavior (Jervis 1997). It is this interactive interplay, informed by emotions and perceptions, which constitutes the real interactive space of terrorism.

Terrorism is best described as a complex interactive system – one subject to changes stemming from both internal and external inputs, significantly different from the sum of its parts, characterized by on-going interactive evolution. Linearity and reductionism cannot adequately address the interactive process, which explains to a significant degree the inadequacy of present-day terrorism scholarship. This study, in

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[11] Jervis notes "power is a function not only of the relative strengths of the actors and the relationship between them, but also in the existing *and possible* relations between each of them and third parties." Jervis (1997: 193). In noting power as a function of the possible, Jervis is acknowledging a perceptual basis for power, one in which each actor and observer may hold unique views. Power, then, is transitive and subjective rather than absolute and universal.

contrast, seeks to step away from the older terrorism perspective with its focus on the constituent parts of the system, and emphasize instead the behavior resulting from the interactive and evolutionary nature of terrorism.[12] Terrorism scholarship needs to begin embracing the principle of complimentarity, seeing terrorism in terms of interactions rather than simply as a collection of constituent "things." (Zukav 1980: 95). Terrorism is a social system, a system of interactions, and as such offers a complex mosaic of dynamic patterns of interactions (Axelrod and Cohen 2000: 21-26), leading to the notion that future scholarly advances will embrace and explore those patterns. This is what Chris Langton (in Lewin 1999: 189-190) characterizes as the never-ending feedback loop, where both vitalist voices, where structure informs components, and mechanist voices, where components inform structure, are important.

This study consequently chooses to view terrorism as a dynamic, interactive process, an open system defined not so much by its constituent parts as by the interactions between system components and between system components and the environment in which they exist. Terrorism, in this perspective, exhibits fundamental emergent properties in that the series of relationships between system agents, and the operative environment itself, changes in response to actions and inactions by all

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[12] A few scholars, such as R. Hudson, et. al. (1999) advocate a focus on mindsets. Hudson argues that "knowing the mindset of a terrorist group would better enable the terrorism analyst to understand that organization's behavior patterns and the active or potential threat that it poses. Knowing the mindsets, including methods of operations, of terrorist groups would also aid in identifying what group likely perpetrated an unclaimed terrorist action and in predicting the likely actions of a particular group under various circumstances." (p. 74) While seeking to better incorporate the intangible aspects, Hudson seeks to evolve and advance terrorism analysis. His perspective, however, is still rooted in the reductionist in its isolation of mindset as a predictive value, offering no hint of how that mindset of the terrorist might interact with the terrorist's perceptions of the environment and affect his thinking. Other notable advocates of the cognitive approach include Martha Crenshaw, Max Taylor, John Horgan, and Jerrold Post.

parties. Nevertheless, as Edwin Wilson astutely notes, "By itself, emergence can be no explanation at all if you don't have any insight into the mechanics of the system. . . ." (quoted in Lewin 1999: 178). It is these mechanics, or the interconnectedness between agents in Jervis's view (Jervis 1997: 17-18), that define not only the structure and extent of agent-to-agent relationships, but dictate the direction and speed of the evolutionary change which takes place among those agents.

Terrorism appears chaotic, especially given its often apparently random acts of violence and lack of either warning or apparent pattern of attacks. Yet terrorism is not chaotic, in the true sense of the word, nor can the interaction inherent in terrorism be described as a chaotic system. By definition, chaotic systems exhibit sensitive dependence to initial conditions, a level of indeterminacy associated with reactions to stochastic inputs, which renders long-rage forecasting an exercise in futility. A chaotic system is inherently unstable, with efforts to predict agent behavior stymied by the wide variation – and indeterminacy – of the system's initial conditions (Rosser 1997: 200-211). With respect to terrorism, appearances are misleading, since terrorism is less dependent on initial conditions than it is on the series of actions and reactions among and between agents that shape the environment and each agent's expectations of the other. This distinction is crucial to making progress in understanding the dynamics of terrorism – terrorism is complex, not chaotic. It is purposive, goal-oriented behavior that not only shapes and modifies agents' behaviors, but shapes and modifies the structure of the environment as well. Violence and threat of violence shape initial conditions, but terrorism is not sensitively dependent on those conditions. Above all, terrorism is a series of consciously chosen

actions undertaken by groups of individuals, not an inevitable outcome resulting from a set of conditions prevalent in some undefined past. Terrorism is a complex adaptive system, and by seeing it as such, we acknowledge a fundamental distinction from a chaotic system, appearances aside, and acknowledge a degree of complexity that transcends and outweighs simple measures of complication.

A complex system exhibits emergence, where well-defined aggregate behavior arises from the localized individual behaviors of the actors in the system. This gross aggregate behavior, moreover, is typically insulated from the effects of reasonable variations in behaviors among the individual actors. But emergence is more than a simple insulation from wide aggregate changes stemming from minor localized changes; emergence is characterized by unexpected aggregate behaviors arising from those localized changes. In short, emergence holds that the whole is more than just the sum of its parts, the whole is different from the sum of its parts (see, for example, Miller and Page 2007: 46).

Suggesting that terrorism is a complex system is not enough, since a distinction can be made between what Weaver (1958) termed disorganized complexity and what Miller and Page (2007) refer to as organized complexity. Within the former lie familiar theories such as the Theory of Large Numbers and the Central Limit Theorem, where the addition of new inputs nudges the aggregate towards an identifiable mean. The addition of more stochastic inputs drives the system closer to an identifiable mean, such that variance from the mean approaches theoretically derived limits. As the set of inputs increase, variations tend to cancel each other out. Organized complexity, on the other hand, is the hallmark of emergent systems. The

addition of more stochastic inputs has no predictable impact on the system or its mean and gives rise, instead, to statistically unexpected regularities. Focusing on the aggregate, disorganized complexity tends toward stability, whereas organized complexity tends away from stability.

As one agent in a dynamical, co-evolutionary system, a terrorist group uses inputs from its environment in addition to self-generated inputs, filtered through whatever operative rule system that exists for that group, to decide on and implement goal-oriented behavior. The effect is to drive the system away from stability by forcing change, modification, and adaptation. The actions undertaken by a terrorist group reflect a series of conscious decisions designed to achieve some group specified objective. Violent attacks, or the threat of violence, are the public manifestations of the group's goal-oriented decision-making. Less obvious, perhaps, are the non-violent group actions – propaganda, rule setting, recruiting, fundraising, learning, social services[13] -- that also serve the goal-oriented objectives of the group. By manipulating their operative environment in both violent and non-violent ways, these groups directly seek to modify and manipulate their environment in order to create a more favorable one for the achievement of their goals and objectives.

The interaction between terrorist and adversary, terrorist and audience, terrorist and environment, introduces a positive feedback loop into the system. Positive feedback, born of agent interaction, amplifies changes.[14] A terrorist bombing

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[13] Most terrorist groups do not engage in what a neutral observer would consider a social service activity, such as the establishment of schools or medical clinics. The reasons are multiple and varied, although many can be tied to either the group's goals and ideology or to the limited resources available to the group. Other groups, however, do engage in such activities, most notably today Hamas and Hizb'Allah.

[14] A negative feedback loop tends to dampen stochastic inputs, forcing the system towards stability.

creates a sense of fear and foreboding, for example, driving the citizenry to demand additional protections from the government. The government, in turn, may seek to meet that demand by imposing a series of restrictions on civilian movement, restricting access to weapons or the media, imposing curfews, engaging in preemptive mass arrests of known anti-government activists, declaring a state of emergency, increasing surveillance of the population, militarizing the police, or a host of other actions. These acts serve to change the environment in which both terrorist and audience exist and act, forcing each to change and adapt in an effort to maintain what each might see as normality or conducive to operations.

All terrorist groups share this purposive action orientation, whether the group is ideologically driven, locality or single issue oriented, or anarchist. The specific set of desired outcomes and goals, however, spans the vast range of human interests and desires. Even groups closely aligned in ideology, purpose, and stated goals offer significant programmatic differences, enough so to make most generalizations risky.

Taken to a more fundamental level, however, by conceptually aligning terrorist groups – and other agents with which they interact – with living organisms, allows the analysis to focus on universally shared dynamical processes inherent in the system of interactions. All terrorist groups, regardless of goal, locality, or ideological orientation share certain survival-oriented objectives. Each, in its own way, realizes the prospects of success are exceptionally slim, if they exist at all, if the organization cannot continue to function over time. Regardless of the degree to which it is consciously recognized by group leaders, all terrorist groups plan and act in ways believed to enhance long-term organizational survival.

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Maximizing Robustness in the Face of an Ill-Defined Future

Similarly, most, if not all, terrorist groups engage in an organizational "reproductive process." They propagandize and recruit, all in an effort to increase their numbers and influence in society. Their opponents, in turn, focus their efforts on programs designed to both mitigate the terrorists' recruiting efforts and to reduce the group's size and effectiveness. Arrests, deaths, woundings, and increased legal pressures inhibit and at times destroy the terrorists' operational viability by forcing the group to expend a greater share of its available resources on basic organizational preservation activities. With less time and fewer resources available for growth-promoting efforts, including violence intended to influence and inspire, a terrorist group on the defensive tends to find itself struggling simply to survive (Oots 1989: 144; Sluka 1989: 65; Silke 2000:77-79).

To enhance survival prospects, even when enjoying operational advantage, terrorist groups tend to devote considerable time and energy to recruiting, propagandizing, and other reproductive activities designed to enhance the group's standing and influence as well as to boost member morale and ensure organizational longevity. Leaders of terrorist groups realize achievement of their goals and objectives will take considerable time, especially given the counter-actions undertaken by the group's opponents. Ensuring group survival through generational change, then, holds an important place in the overall ordering of group objectives.

Terrorist groups seek to "reproduce" through persuading potential sympathizers in society to support the group's efforts and by persuading the more

impassioned and daring among those sympathizers to act on their sympathies and join the group. Increasing organizational membership, either by application and initiation or by developing a cadre of individuals capable of replacing lost members as needed, serves as the terrorist's "reproductive" process. Associated activities designed to make the larger societal environment more amenable to the terrorist group's objectives also serve as part of the group's reproductive effort in that such environmental modification makes reproductive efforts easier. The persuasive efforts, both violent and non-violent, target multiple audiences. The most apparent, the victims, are often characterized by the terrorist as somehow warranting punishment for some real or perceived transgression of their own or of others, for whom they serve as a surrogate representative (Drake 1998b: 57). The compliment, however, is that terrorist often sees some other collection of individuals as allies, would-be allies, or having some natural affinity or kinship. While the group's ideological frames of reference and rhetoric seek to rationalize and justify violence against the "enemy", messages intended for allies, allies-to-be, and presumed affinity groups – what Taylor and Horgan (2001, 2006) refer to as the terrorist's supportive environment – seek to establish shared purpose and common cause. This being the case, a "successfully reproductive" terrorist group would be expected to show higher degrees of consistency between ideology and rhetoric, on the one hand, and target and weapon selection, on the other, such that the presumed allied or affinity group finds reason to support the terrorist's activities. The degree to which a terrorist group can establish and maintain clear cohesion and correspondence between rhetoric and action, and the degree to which they can establish and maintain congruence between rhetoric, action,

and audience wants and expectations, the greater the likelihood the terrorist group will find success in its reproductive efforts.

Resolving the Dilemma

If the current state of terrorist research is less than optimal for making insightful progress, what might be done to shift perspective? How are we to overcome the limitations imposed by the current reductionist, linear, zero-sum approach? The approach taken here is to attempt to overcome those limitations by redefining terrorism as a complex adaptive system. This approach allows for the integration of agent interaction, positive feedback loops, and emergence into a model of a system that exhibits continuous evolutionary change.[15]

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[15] This is the essence of the argument for computational modeling made by Miller and Page (2007).

Chapter 2: Interpretations of Terrorism: A Literature Review

Despite the tremendous volume of literature on terrorism and terrorists, little work has been done directly addressing either the evolution of terrorist groups or the relationship between terrorist groups and their presumed audiences. Studies focusing on organization history, structure, hierarchy, ideology, or activities of specific groups frequently offer considerable detail, but their scope rarely extends beyond a very narrow organization-specific treatment (see, for example, Dartnell's 1990 examination of France's Action Directe; Kassimeris's 2001 work on Greece's November 17; Bell's 2000 work on the Irish Republican Army; and Gunaratra's 2002 work on al-Qaida, among others). A few scholars have offered comparative studies of a selective, limited number of groups (for example, McClintock 1998; Alexander and Pluchinsky 1992a and 1992b), but retain significant focus on the structural and organizational aspects of those groups selected for study. A large portion of the literature appearing after the 11 September 2001 attacks on New York and Washington similarly focus on al-Qaida and associated and similar groups, yet even as this body of work has evolved toward examinations of a loosely defined *jihadi* movement, focus remains severely constrained. Where the literature on terrorism treats evolutionary themes or life cycles of terrorist groups, overwhelming emphasis remains firmly fixed on structural and operational themes, such as the presumed causal factors of terrorism or the factors thought to contribute to the defeat of terrorist groups.

This body of work, as important as it is, leaves significant gaps in understanding the evolutionary dynamics of terrorism. How terrorist groups recruit, grow, expand, and adapt to their environment, environmental stressors, and the actions of their adversaries remain in large part ignored by students of terrorism. There are, however, a few notable exceptions but these works still tend to address the growth and development of insurgent groups, like that of McCormick and Giordano (2007), focusing almost exclusively on how insurgents address their own persistent free-rider and collective action problems[16] through growth and retention strategies. The inquiry arena for these studies, as a result, lies not in the interactive dynamics between the group and its presumed constituency or audience, but rather on the group itself and its internal decision-making and problem solving processes. Those times the literature ventures towards group-audience interaction are generally limited to studies biased by an underlying perceptual and interpretive frame that can only see that interaction in terms of media manipulation, structural change, or propaganda. Where the literature does examine the role of dialogue between a terrorist organization and its constituency, whether real or presumed, it typically remains limited to considerations of recruiting (Weimann 1987 and 2006 and others), hostile attempts to manipulate opponents' perceptions and will (Leeman 1991), or the benefit and efficacy of claiming responsibility for violent acts (B. Hoffman 1997; Rapoport 1997; and Pluchinsky 1997).

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[16] The free-rider problem is essentially one of fairness (or perceived fairness), in which the issue revolves around concerns that an actor consumes more than its fair share of a given resource or shoulders less than its fair share of an associated burden. The collective action problem concerns the provision of public goods through collaborative efforts and the impact of external factors on those actors. For the terrorist or insurgent group the free-rider and collective action problems, combined, yield a question in sharing in benefits of group membership – assuming goals are achieved – without sharing an equal degree of risk stemming from active membership in an armed extra-legal group.

The present effort seeks to expand treatment of terrorist communicative activities by explicitly focusing on the terrorists' use of words and deeds in an effort to build and maintain a supportive audience. It further seeks to use that dynamic to assess the potential for organizational evolution, whether growth, decline, or stagnation. Not all terrorist groups find sufficient support within and among their target audience, despite the necessity of generating and maintaining some minimal level of support. Failure in this effort is believed to offer significant detrimental effects to the group's ability to maintain operational viability over time. In one respect, "the history of terrorism is," notes Abrahms (2005:536), "the history of miscommunication, with many groups understanding the need for effective communication with an audience but nevertheless unable to develop and implement a workable communications strategy." The Symbionese Liberation Army (SLA), for example, terrorized California in the early to mid-1970's, culminating most notably in the abduction and assimilation of newspaper heiress Patricia Hearst and the shootout with members of the Los Angeles Police Department, which effectively ended the group's operational existence. The SLA failed miserably in efforts to attract new members in sufficient numbers to keep pace with their own ambitions, the effective countermeasures of law enforcement authorities, and attrition stemming from members going further underground. As a result, the SLA had a relatively brief, if eventful, lifespan. Germany's Red Army Faction (RAF), in contrast, offered a vision and ideology in some ways quite similar to that of the SLA, yet it was able to maintain operational viability for 30 years. Unlike the SLA, the RAF did not suffer ultimate defeat because of government action; rather, the end came when RAF

leaders concluded the German public was too intellectually stunted to understand and accept their proper role and responsibility in accordance with Marxist thought (Red Army Faction 1998). The lesson of communication's importance is not lost on most terrorist groups.[17] Even religiously inspired terrorists recognize the operational importance of effective communications with a temporal, earthly audience. In November 2001, Osama bin Laden clearly indicated the 11 September attacks were "speeches" designed to relay messages to an intended audience (see Weimann 2006: 39-40).

The SLA and RAF offer but two examples of the variability of possible evolutionary outcomes for terrorist groups. Both operated in liberal Western democracies during the same period. Both groups claimed a Marxist-Leninist ideology that, on closer examination, appeared more anarchist than orthodox Marxist. Both claimed to seek the destruction of the capitalist system of exploitation that they saw operating in their country and in the West, and both faced state authorities well versed and capable in counter-terrorism and law enforcement. Yet one of the groups – the RAF – survived over an extended period despite active (and effective) state opposition and, by some measures, prospered, while the other group enjoyed only a very brief operational existence. Other than pointing out arguably minor differences in law enforcement capabilities and in social, cultural, and political environments, the literature on terrorism offers no real explanation for the differences.

More recent contributions to the literature suggest the origins some differences may lie in the ideological groundings of the groups themselves. A wave of

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[17] The Weathermen, a violent offshoot of the Students for a Democratic Society, for example, noted that "Armed actions forward people's consciousness . . . yet they must be clearly understandable to the people." Quoted in Abrahms (2005: 536).

research on terrorist group motivations emphasizes the presumed religious imperative and suggests that religiously-inspired groups are fundamentally different from secular groups (see, for example, B. Hoffman 1995 and 1997; Laqueur 1999; and Stern 1999), implying that those differences are so basic and so ingrained that the "religious" terrorist and the secular terrorist could be considered unique archetypes. Those supporting such a notion suggest that the ideological differences are so fundamental as to make meaningful comparisons no better than cursory ones. Yet a closer examination offers a series of quite similar evolutionary patterns, independent of group ideological influence. Others have questioned the religious-secular dichotomy, arguing that a more meaningful explanation of observed changes lies in a cyclic, or wave, pattern of type ascendency (Rapoport 2002), that the differences are more applicable in tactical and operational decision making (Rapoport 1977 and 2001c), or more meaningful in understanding the terrorist perspective (Bell 1998; Taylor and Horgan 2001 and 2006; and Gressang 2000 and 2001).

Evolutionary Literature

The literature on terrorism offers tremendous detail and considerable depth, but does so by addressing very small, select slices of the larger phenomenon. On some of the more easily understood aspects, like group histories and structures, the literature's offerings can be overwhelming in their scope and breadth. Very few, if any, modern terrorist groups have been overlooked or ignored in the literature, and for some of the major groups like the Irish Republican Army, the Palestinian

Liberation Organization and its constituent groups,[18] and, more recently al Qaida, hundreds, if not thousands, of offerings are available. Similarly, more contentious issues also generate a tremendous volume of literature, also running into the thousands. The debate over the potential for terrorist use of weapons of mass destruction, the role of informing group perspectives and decisions, the appropriateness of various counter- and anti-terrorism strategies, and the nature and causes of terrorism are clear examples of issues dominating significant portions of the terrorism literature.

That literature's vast number of offerings, however, share remarkable similarities in their limitations. Most are reductionist, taking small, selected aspects of the phenomenon, its participants, its environment, or its impact, and examining each in isolation. The result is a body of literature remarkable for its ability to both address the minutiae of terrorism and miss the phenomenon's interactive dynamics. The literature is also remarkable for its insistence on emphasizing temporal aspects. Terrorism studies address pre-modern groups, or modern groups, or 1970s leftist and anarchist groups, or *jihadi* groups of the past 20 years, but rarely look beyond and single type or era. As a result, very few offerings provide long-term contextual perspectives that could allow for a more nuanced understanding of origination factors.[19] Because it is easier to conceptualize, gather data, and analyze the more

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[18] Contrary to popular belief, the Palestinian Liberation Organization (PLO) is an umbrella organization for a number of Palestinian groups spanning the ideological spectrum. Yasir Arafat, the man most associated with the PLO, owed his position and status to his leadership of al-Fatah, the dominant PLO constituent organization.

[19] Origination factors are those unique combinations of structure, environment, socio-political conditions, institutions, and actions identified as precursors to the emergence of an armed militant group. Considering origination factors, rather than causal factors, is preferred since causality cannot be conclusively identified and applied from one group to the next and, indeed, to individuals within each group.

concrete and more reducible aspects of terrorism, the literature also tends heavily towards the tangible. In the drive to explain terrorism, commonality is consequently elevated to a position of preeminence, leading to treatments that often disregard, ignore, overlook, or simply not consider unique cultural, emotional, and social aspects of terrorist group evolution.

Even when the literature tentatively seeks to address larger dynamical processes, cultural underpinnings, and interactive processes, results tend to be limited to classification, sorting, and generalization. In the sub-literature on terrorism's communicative aspects, for example, focus remains limited to a small set of carefully parsed and delineated topics. A large portion of this literature points in various ways to analytic isolation of terrorist communications, where the authors seek to identify critical elements in dialogue that might offer clues of future group decisions and actions. Peter Suedfeld and Dana Leighton's (2002) work on integrative complexity, leadership interpretations of environmental and situational factors, and the way in which each informs subsequent communicative signaling of decision-making, is a clear example. Similarly, Leonard Weinberg and Louise Richardson (2004) apply a conflict theory framework to link perceived adversarial strength and position to willingness to de-escalate, bargain, and negotiate. Others focus on the interpretation of specific messages, leading some to allow their own perceptual biases to creep into the assessments.[20] Indeed, there is relatively little analysis of the language used by terrorists and their adversaries, and what little there is has been of a limited, largely descriptive nature (Wilson and Rose 1997: 54-56). Still others use the writings of

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[20] Yoram Schweitzer, quoted in Weimann (2006: 46), argues that "bin Laden typically selects a few historical incidents, takes them out of their context and twists their significance, and uses them as a rational and moral pretext. …"

terrorists to turn analysis inward, leading to interpretive social constructs of the terms *terrorism* and *terrorist* (Fortin 1989 and Tuman 2003). A larger literature has been written on terrorist communications, but this literature treats communications as a mechanism of terror and offers little insight into whether that communication is effective and, if so, how and why.

The Nature of Terrorism

Terrorism is a complex, highly fluid phenomenon that defies easy description and categorization. In an effort to understand it, however, the literature endeavors to classify terrorism as belonging to one type or another, allowing for both easier application of an understandable frame of reference and for application of and interpretation by accepted generalities. Terrorism has been studied, consequently, from multicausal, political, organizational, economic, socio-cultural, physiological, and psychological points of view.[21] Other fruitful approaches have focused on intra-group dynamics and the interplay between opposing tendencies in group decision-making, first demonstrated by Bion (1961), or on the internal group psychological climate, building on a foundation laid by Zawodny (1978). The resulting behaviorally oriented studies of terrorism are as instructive for what they offer as for what they leave out.

For many authors, terrorism is a violent manifestation of behavioral tendencies, most notably goal-seeking behavior. One of the earliest, and arguably most influential, of such arguments is Martha Crenshaw's (1985) exploration of terrorist motivations and decision-making. In this view, terrorist activity offers

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[21] For a concise summary of this literature, see R. Hudson et. al. (1999), especially pages 22-28.

predictable patterns, which can be used to explain broad ranges of observed and inferred behaviors, trends in terrorist activities, and the specifics of attack activities. Within this broadly delineated interpretive perspective, the rational actor model achieved prominence as a framework for assessing and interpreting terrorism. Predicated on the notion that terrorists can, and probably do, weigh relative costs and benefits in ways designed to achieve some maximum utility, as defined by the terrorist, the application of the rational actor model has afforded scholars the opportunity to offer in-depth descriptions, insights, and explanations of terrorist activities. The "rational" terrorist has thus been shown to be quite responsive to incentives (Ginges 1997), to be amenable to considerations of alternative incentives when the preferred incentive was deemed unattainable (Islami and Shahin 2001), subject to deterrence when properly designed and applied (Sandler, Tschirhart, and Cauley 1983), to act in accordance with a definable cost-benefit calculus (Enders and Sandler 1999), and shown to act in accordance with predetermined goals and expected outcomes despite the apparent illogic of their acts (Rapoport 1984, Sprinzak 2000b, and Hoffman and McCormick 2004). Other applications of a rational actor model have explored the interplay between rationality, norms, and conflict (Hafez 2006), used the rational actor model in game theoretic and virtual reality simulations (Weaver, Silverman, Shin, and Dubois 2001), and modeled terrorist behavior in hostage incidents (M. Wilson 2000). Some scholars, however, like Chai (1993), have argued that the rational actor approach cannot be extended from state to sub-state and non-state actors, at least in the ways necessary to explain terrorism. The more prevalent view, however, holds that the rational actor model can be effectively

adapted to the realities of terrorism, at least to the extent that it allows for reasonable interpretation of low-level politically- and ideologically-driven violence. Caplan (2006), for example, argues that efforts to discard the rational actor model in terrorism studies are premature since terror represents a form of purposive behavior. The rational actor model of terrorism thus provides a useful and conceptually handy paradigm from which seemingly non-sensical behaviors can be explained. Much of the literature on suicide bombings (see, for example, Merari 2007; Juergensmeyer 1997, 2000a, and 2000b, and others) adheres to the notion of rationally acting terrorists.

Others, however, continue to deny, denigrate, or disregard the notion that terrorists – particularly suicide bombers – can somehow be deemed rational. A large body of literature has consequently focused on psychological and/or spiritual aspects of actual, claimed, or presumed motivations of terrorists. For some, the question is not one of rationality or irrationality, but one of the psychological processes associated with involvement in terrorism. Horgan (2008), for example, outlines three predominant psychological processes – becoming involved, being involved, and disengagement – associated with terrorism involvement. Others, such as Khashan (2003) and Peleg (1997), see the interplay of frustration, grievance, situation, and belief as keys to understanding why some choose to join terrorist groups and why those groups choose to engage in violence. Still others, most notably Post (1984, 1990, and 2000), Turco (1987), and Stern (1999), see the pernicious effects of mental illness and psychological maladjustment as the critical defining factors for explaining terrorist behavior. Similarly, numerous authors focus on ideologies and beliefs,

particularly religion, as critical motivating and driving factors. These authors offer

perhaps the most widely varied set of assumptions and conclusions within a single

interpretive framework. Scholars such as David Rapoport (1984, 1990, and 2002) and

Taylor and Horgan (2001 and 2006) see religion as an operative and interpretive

framework which colors the terrorists' interpretation of the world, the motives which

guide and inform his actions and the decisions he makes, from the strategic to the

most mundane. For a majority of others (see, for example, Gavin Cameron 1999;

Hudson et. al. 1999; B. Hoffman 1995; Pearce 2005; and Laqueur 1999) the

religiously motivated terrorist is separate and quite distinct from his secular

counterparts. This "new" terrorist is, as a result of religious beliefs and motivations,

presumed to be more fanatical, more acceptant of mass casualties, less likely to

accept responsibilities for his actions (transferring responsibility to whatever deity

that is believed to be directing his actions), and more amenable to the use of weapons

of mass destruction. While there is sufficient research suggesting greater intractability

in conflicts involving religious differences (see, for example, Ellingsen 2005),

significant doubts remain about the existence of modern terrorists with purely

religious motivations.[22]

The literature on terrorism in the aftermath of the 11 September 2001 attacks

on New York and Washington shows an abrupt shift in emphasis, focusing more

recently on counteraction, counter-strategy, and outcomes. Some authors have

retained some of the more abstract aspects of pre-9/11inquiry, such as Andrews and

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[22] This is an on-going debate, much of which is tied to the question of whether or not terrorists will again use weapons of mass destruction. As a number of authors have pointed out, most modern terrorist labeled "religiously motivated" actually have a significant secular purpose and goal set. See, for example, Sprinzak (1998 and 2000b), Rapoport (1984 and 2002), and Gressang (2001).

Lewis's (2004) discussion of complexity-based counter-terrorism ethics and Ginges, et. al's. (2007) examination of religious values on reasoning, decision-making, and the consideration of material inducements to behavioral change. Others have explored potential counter-terrorism strategies and tactics by designing and running simulations and models (for example, Jacobson and Kaplan 2007 and Ulmer, Sellnow, and Seegar 2006). The impact of the 9/11 attacks, as well as subsequent mass casualty attacks attributed to al Qaeda and its allies, coupled with the U.S. government's "Global War on Terrorism," has quite possibly triggered a fundamental shift in the literature culminating in an overwhelming number of offerings seeking to address tangible aspects of anti-terrorism and counter-terrorism. There has been, as a result, no shortage of contributions offering solutions across a range of activities, from effective leveraging of expertise by organizational design (Sullivan 2005, Gressang and Baxter 2005), improved crisis command and control (Stephenson and Bonabeau 2007), systems engineering (Hari, Cropley, and Zonnenshain 2005), improved and expanded network security (Settings 2001), improved communications infrastructure, organization, or operations (Corman, Trethewey, and Goodall 2007; Boscarino, Adams, et. al. 2006; Freedman 2005; Kapucu 2006; Wray, Rivers, et. al. 2006), or in more nuanced and effective data mining of open sources (Memon, Hicks, and Larsen 2007; and the Dark Web Project 2008).

Despite the apparent shift in literature focus, at its most fundamental level, terrorism is still subjected to a reductionist perspective. Despite the advances in the fields of network analysis and complexity, where focus shifts from the component pieces of a system to the interactions and relationships between those pieces, most

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writings on terrorism continue time-honored traditions of deconstructing the phenomenon to individual agents and singular aspects of terrorism. Causal analysis of terrorism, for example, centers around efforts to explain why some people become or support terrorists (see Post, Ruby, and Shaw 2000), factors leading to increased small group radicalism, psychological factors, the factors that "cause" terrorism, and the tangible aspects of effectively countering the terrorist, as noted above. Unfortunately, as Victoroff (2005) notes, all psychological studies of terrorists are inherently speculative, since each must rely on subjective observational interpretations. As a result, he notes, we lack an understanding of terrorism's heterogeneity. It is fair to say, the same generally holds for much of the rest of the terrorism literature.

Much of the reason for this is that the bulk of terrorism literature focuses on the individual terrorist, potential terrorist, or terrorism supporter. Examinations of the terrorist's psychological make-up have provided and deep and rich body of literature over the last four decades. Pioneers in this field, such as Post (1987 and 1990), Lipset and Raab (1970), Gurr (1970), J.C. Davies (1962), Billing (1978), Peleg (1997), and Ferracuti (1982) have collectively offered a extraordinarily nuanced portrait of the terrorist mindset. Others have sought psychological explanations for the individual's gravitation towards terrorism, leading in at least one instance to authorities conducting post-mortem examinations of terrorists' brains (see P. Finn 2002). Explanations of terrorism thus include unrequited grievances and relative deprivation (Russett 1964, Gurr 1970, and Muller and Seligson 1987), assumptions of negative identity (Knutson 1981), narcissistic rage (Post 1984; Crayton 1983; and Pearlstein 1991), cultural impact on personality (Ferracuti 1982), mental illness or psychological

deficiencies (Post 1990), and "agitated tissue response" to stress (Hubbard 1983).

Despite the literature offering physiological and psychological explanations of

terrorism, there remain very broad and significant gaps in understanding – especially

given the individual-centric approach adopted by most – leading to the continued

emphasis on terrorists' mental make-up and processes (see R. White 2000) or the

rejection of psychological explanations, since these can be interpreted as absolving

the terrorist of responsibility for his acts (Heskin 1984; Crenshaw 1981; Taylor 1988;

and Spinzak 1990 and 2000a, among others).

Other contributions to the literature have moved analysis beyond the

individual-as-self-contained system to include consideration of the transformative

nature of life experiences (Duncan 1999), the cultural and social impact of terrorism

(Oots and Wiegele 1985), the impact of culture on potential terrorists (Post, Ruby,

and Shaw 2000), and the effect of social conditions on terrorist decision making (Ga.

Cameron 1999). Duncan (1999) builds on earlier works on collective action group

formation, suggesting the impact of disruptive events, particularly when coupled with

an awareness of social stratum standing, helps determine a propensity toward

activism. Muhlberger (2000) takes a similar approach when suggesting that the

relative lack of sophistication in moral reasoning among the economically and

socially disadvantaged makes them more easily mobilized into social movements.

Mousseau (2002) sees the greater impact of globalization and its effect on the

individual, arguing that terrorism is not so much rooted in poverty as it is in the

beliefs and values arising in developing countries' mixed economies as driven by

globalization forces, which act to disrupt the traditional stability of location-specific

social and economic structures. From a slightly different perspective, Feldman (2003) finds that support for counter-terrorism efforts reflects a complex interplay between actors rooted in perceptions of social conformity standards. Here, the degree to which those standards are challenged shapes the degree to which the affected public is willing to accept restrictions on civil liberties. To Taylor and Horgan (2001), ideology and rule-following behavior, within a social context, are intimately linked with contingency-controlled behavior and its tolerance and acceptance of deferred reward associated with religiously motivated terrorists. Sprinzak (2000a) also saw a dynamic process between individual, society, and group and developed a blend of factors specific to the organization, stemming from its interaction with society, to provide early warning of the transition from non-violent radicalism to violent terrorist group.

With the typical focus on individual motivations, one of the preeminent scholars in the field, Crenshaw (2000:409) deemed it appropriate to remind us that "[o]ne of the basic research findings of the field is that terrorism is primarily a group activity. It is typically not the result of psychopathology or a single personality type." Nevertheless, when examinations of terrorism are elevated to the group level of analysis, the terrorist group is most often treated as a single, unitary actor. Decisions, acts, and behaviors are addressed as functions of the group, rather than as the outcome of some complex intra-group process. Observable outcomes, then, are not considered potentially variable, given the uncertainties of intra-group decision-making dynamics. Any dissention, disagreement, discussion, or compromise within the group decision-making process is thus disregarded from the onset, despite the fact

that intra-group dynamics can have a significant impact on subsequent actions. In early studies, Oots (1986 and 1989) chose to see terrorist groups as a type of political interest group, with organizational considerations affecting group formation, activity, and decline. Applying individually-focused explanations to a collective further expanded the knowledge of terrorism, with Crenshaw (1990a: 9) asserting that an advantage "of approaching as a collectively rational strategic choice is that it permits the construction of a standard form from which deviations can be measured." While such an understanding certainly allows for the recognition of new developments and adaptations, it does little for increasing understanding of the complex interplay of factors that push the phenomenon in one direction or another. Nevertheless, Gupta (2005), among others, seeks an integrative model by expanding rational choice theory to incorporate group motivations. Among more recent contributions, Crelinsten (2002) has perhaps done more to break the bonds of reductionist, unitary actor thinking in building a model of terrorism as political communication. His model focuses its analysis on a dynamic relationship, albeit between two unitary actors, the "controller" (i.e., state authorities) and the "controlled" (i.e., the sub-state protest group). Placing the terrorist-audience-adversary dynamic into such limited terms consequently focuses analysis into a zero-sum perspective in which gains by one equal losses by the other, that does not adequately capture or describe the phenomenon.

Terrorism as a Dynamical System

Surveying the literature on political violence, in general, and terrorism, in particular, suggests the field either has reached or is very quickly approaching a

crossroads where scholars will have to re-examine many assumptions that have come

to form the foundation of terrorism studies. One of the most basic assumptions

subject to such re-examination is the pragmatic lens through which terrorism is

studied. Is terrorism an unusual and generally unexpected anomaly in an otherwise

largely ordered and stable system, or is the very ambiguity and uncertainty of

terrorism indicative of a deeper, less understood systemic character? Does terrorism

represent a sporadic variance in a reciprocating system where total losses equal total

gains, or does it point to a more inherently unstable system driven by positive and

negative feedback mechanisms arising from both endogenous and exogenous

sources? Is social and political evolution, the context in which terrorism takes place,

linear, or is it non-linear and less predictable than is typically thought? To this point,

most of the literature ignores the possibility that terrorism embodies, not just

represents, the non-linear, the uncertain, and the unpredictable.

Forty years ago, Barton (1968) challenged the social science community to

recognize the limitations inherent in randomly sampling a human population, then

seeking to generalize the beliefs and belief-driven behavior to a larger population:

> For the last thirty years, empirical social research has been dominated by the
> sample survey. But as usually practiced, using random sampling of
> individuals, the survey is a sociological meatgrinder, tearing the individual
> from his social context and guaranteeing that nobody in the study interacts
> with anyone else in it. It is a little like a biologist putting his experimental
> animals through a hamburger machine and looking at every hundredth cell
> through a microscope; anatomy and physiology get lost, structure and function
> disappear, and one is left with cell biology . . . . If our aim is to understand
> people's behavior rather than simply to record it, we want to know about
> primary groups, neighborhoods, organizations, social circles, and
> communities; about interaction, communication, role expectations, and social
> control. (Barton 1968, quoted in Freeman 2004: 1).

Much progress has been made since 1968 to address Barton's concerns, but few studies seem to have succeeded in moving beyond the constraints of a linear perspective. Linearity, and its close relative, simple cause-and-effect, remain the bedrock upon which much research continues to rest. Linear systems are relatively simple, easily comprehensible, easily modeled, and offer verifiable and reproducible results. Over the past few decades, however, new sciences developed primarily in the fields of biology and physics, have begun to claim a greater share of attention and have seen initial efforts, often tentative, to apply each to the social sciences. These new fields, chaos and complexity in particular, may represent the future of social sciences inquiry.

There has been tremendous growth in the chaos and complexity literatures, leaving some to marvel at how cautious and uncertain efforts to apply each to the social sciences have been (Harvey and Reed 1997). Much of the tentativeness stems from the perceptual differences inherent in chaos and complexity. In sharp contrast to linear models, those built on chaos and complexity demand that instability and disorder remain essential elements of the system (Elliott and Kiel 1997), rather than marginalized as either randomness or error. This need to include instability and uncertainty as essential and inseparable elements of the system, required by the very interaction of system components, drives the resulting non-linear models away from the comfort of outcome predictability and replicatability (see Campbell and Mayer-Kress 1997; Harvey and Reed 1997). Successful application of complex systems lessons also suggests the need to focus attention on the organizational level, rather than on the individual or state levels, since it is, in Fellman and Wright's (2003: 3)

words, "a non-linear dynamical system characterized by a low-order chaotic attractor" exhibiting regularities but not periodicity. Terrorism, consequently, is not truly random despite appearances.

Even with non-linearity's demands and the discomfort inherent instability and uncertainty appear to cause, a growing number of scholars have recognized social and political systems as dynamic, non-linear systems for which chaos and complexity offer more accurate modeling concepts than earlier linear, game-theoretic approaches. Chaos and chaotic models have been used to explore a growing number of system-level questions. Diana Richards (1993), for example, uses the lessons of chaos to test for the presence of cyclic patterns in the concentration and distribution of international power, finding the system is chaotic rather than cyclic, with an underlying power transfer order producing non-determinant patterns over time. Such findings, according to Richards, suggest that depending on existing system conditions, multipolarity, bipolarity, and hegemony can all be stable configurations. Others have used the lessons of non-linear dynamics, chaos, and complexity to examine network technologies and their use in counter-terrorism command and control (Don, Frelinger, et. al. 2007), nation-state development and dissolution (Cederman 1997), terrorist attack frequencies and their scale-invariant characteristics (Clauset, Young, and Gleditsch 2007), differences between individual Islamist militants and the transnational Islamist militant phenomenon (Harrow 2008), intergovernmental relations (Comfort 2002), counter-terrorism structure and organization (Beech 2004 and Taipale 2005), complexity and predictability in international relations (Saperstein 1997), general political science applications

(Harvey and Reed 1997), agent-based modeling of public policy development (Elliott and Kiel 2003), and rule-following among violent Islamists (Taylor and Horgan 2001). Others have applied the same lessons and insights in a more focused way. Ahmed, Elgazzer, and Hegazi (2005), for example, apply complex adaptive systems lessons using a game theoretic approach to conclude terrorism is flexible and adaptable, mirroring the argument offered by Enders and Su (2007) that rational terrorists will challenge organizational and activity levels to adapt to adversarial counter-actions.

The potential for applying chaos and complexity to violent conflict studies, including terrorism, has been recognized, but not yet fully explored. Stohl and Stohl (2002) argue appropriate applications can generate new and useful insights on the ways terrorist groups are organized, offer valuable critiques of anti- and counter-terrorist policies, and can help open new and more productive research avenues. Unfortunately, few have sought to use the new sciences of chaos and complexity to explore the dynamics of terrorism. One who has, Cetina (2005), argues that the new terrorist organization, the truly transnational organization of global reach, rises from global microstructures[23] whose scopic mechanism creates a transcendent time and context by serving as a mirroring device (Cetina 2005: 222). In effect, Cetina argues that al Qaeda, as the exemplar of the new terrorism, is not a mere network as others have characterized it, but that it has evolved into something more by virtue of its

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[23] Cetina defines global microstructures as "structures of connectivity and integration that are global in scope but micro-sociological in character," with four defining characteristics: 1) lightness, or bottom-up organizational structures that are not tied to formal institutional processes; 2) microstructure effectiveness despite their non-conformance with rationalized systems, largely due to feedback mechanisms that exploit proportionalities between input and output; 3) scale-free with external influences and environment adding fundamentally important "texture" and depth, and; 4) they evolve to more effectively deal with structural and environmental irritants. See Cetina (2005:215-217).

creation of reality rather than simply mirroring and projecting an already existing

reality. A closer examination of this argument shows incremental progress in

adopting and applying complexity, building a greater depth of explanation than has

been offered before (see, for example, Bell 1998 for an earlier application) rather than

offering a more meaningful breakthrough.

One of the more promising avenues for incorporating the lessons of

complexity and related sciences lies in exploring aspects of emergence as they apply

to the beginnings, growth, evolution, and decline of terrorist groups. Emergence, a

hallmark of complex systems is, in Steven Johnson's (2002: 18) words, "the

movement from low-level rules to hyper-level sophistication," where the interaction

between neighbors in the system is reciprocal, providing feedback to the system for

growth and self-replication. Emergent systems are rule-governed systems; it is this set

of rules that determines parameters of agent behavior and which provide regulatory

feedback. Without parameter-defining rules, the system would cease functioning due

to the resultant overwhelming positive feedback that would drive the system toward

either true chaos or functional gridlock.

As such, emergent properties are found at the micro and macro levels, or as

Halley and Winkler (2008) assert:

> Emergence is a phenomenon that can exist across many scales of
> organization. . . . It is therefore possible to envision a continuum of emergence
> spanning these scales, ranging from the simplest phenomenon that can be
> considered emergent to the most complex and esoteric processes in existence.
> (Halley and Winkler 2008:11)

Building on an understanding and appreciation of emergence, among many

other insights and traditions, scholars of networks, particularly those engaged in

social network analysis and dynamic network analysis, have laid the necessary groundwork for advances in understanding terrorist group evolution. Using a perceptual and analytic framework borne of complexity science, the literature on social network analysis, dynamic network analysis, and netwar[24] offers viable avenues for developing a deeper appreciation of the newer, non-hierarchical terrorist organization. The newer organizational schemes employed by terrorist groups eschew more traditional hierarchical and cellular structures in favor of more fluid and adaptable polycentric networks of interactive semi-autonomous agents and associates. Largely unstated, but no less noteworthy, the evolutionary process leading to this shift suggests terrorist groups have adapted as their opponents' capabilities for effective action have increased. Organizational evolution has consequently been portrayed as an adaptive reaction undertaken to enhance survivability, which it certainly is, yet the adaptive and evolutionary mechanisms remain unexamined.

The sense that terrorist change and adaptation, particularly in organizational structure, is exclusively dependent on a series of actions initiated and directed by a group's opponents nevertheless remains, denying the possibility of change resulting from the terrorist group's own initiative, defining group evolution solely in terms of action-reaction dynamics and external stimuli. Lost in this perspective is the sense that terrorist groups, as functional entities, can and do initiate change, consciously and unconsciously, for their own purposes. Social network analysis studies, on the other hand, recognize the importance of relationships between and among entities in a

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[24] According to Arquilla and Ronfeldt (1999: 29) netwar is a situation in which "non-state actors employ networked rather than hierarchical organizational structure, relying on network forms of organization, doctrine, strategy, and communications to do battle in the information age."

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system,[25] focusing on relationships, the conditions under which they arise and change, and the consequences of both their existence and their evolution. In its consideration of the linkages between actors, or nodes, rather than considering the actors themselves, social network analysis uses a number of metrics to describe and evaluate the nature and strength of those relationships.[26] Networks, however, are not all alike, leading Barabási (2002), Barabási and Albert (1999), and Barabási and Bonabeau (2003) to distinguish between random networks, in which the network consists of nodes randomly connected to others, and scale-free networks, in which there is an observable inequity in the distribution of linkages between nodes. In random networks, nodes tend to have roughly the same number of linkages, with distribution of linkages randomly determined. Scale-free networks, as their name implies, exhibit a much wider variance, with a significant proportion of linkages distributed among far fewer nodes, leading to the formation of hubs, with developed scale-free networks typically having several large hubs that define the topology of the network.

The social network analysis perspective has contributed a growing number of works describing the organizational and relational structures of terrorist organizations. Krebs (2002), for example, describes in detail the interactive patterns between 9/11 conspirators, showing both the central role of Mohammed Atta and the

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[25] See Freeman (2004) for a detailed presentation of the history and development of the social network analysis field. Arising primarily from the sociological and anthropological disciplines, social network analysis is characterized by structural institutions that serve to link system actors, a reliance on graphic imagery, empiricism, and mathematical and computational models.

[26] Social network analysis metrics include betweenness (the extent to which a node is directly connected to other nodes), centrality (the number and extent of ties a node has to other nodes), centralization (extensiveness of connections, used to identify hubs), cohesion (strength of relationship linkages), and reach (the degree to which a given node can connect any other node in the network, used to determine extent to which a node may be isolated).

less-anticipated yet equally central role of Marwan al-Shehhi. Similarly, Fellman and

Wright (2003) and Cetina (2005) have offered arguments in favor of using social

network analysis for identifying and describing networks as the primary object of

interest in current terrorism studies, while Houghton, et.al. (2006), like Krebs, offers a

strong argument for using social network analysis to identify hubs and critical nodes

and linkages in those networks. Goolsby (2006) examines al Qaeda's evolution from

a support organization for Afghan militants to a global terrorist threat to show such

evolution resulted from selected endogenous and exogenous pressures rather than

from random chance. Several, most notably Galam (2004), have tried to expand

network analysis of terrorism to find a universal formula suitable for describing

certain aspects of terrorism,[27] but Galam's ideas have met with considerable criticism

(Wieman and Naor 2003). Other have turned the focus to internal group and network

dynamics such as interpersonal influence within groups (Friedkin 2003), the impact

of formal and informal social roles (Johnson, Palinkas, and Boster 2003), presence or

absence of a relationship between degree distribution and network structural aspects

(Snijders 2003), and polarization and self-organization of networks into antagonistic

factions even without conscious direction or intent (Macy, Kitts, and Flache 2003).

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[27] Galam (2004) uses Percolation Theory in an attempt to derive a "universal" formula for all percolation thresholds to explain spatial movement of extremists. Percolation Theory, as used by Galam, strives to explain the behavior of connected clusters in a network, here terrorists, identifying the conditions under which terrorists might physically "diffuse" through a defined spatial arena. Galam seeks to calculate a Galam-Mauger percolation threshold to describe the ease of diffusion in a society. For Galam, the greater the extent to which terrorists seek linkages in a population, the more interactive dimensions are present. Greater numbers of interaction dimensions, which Galam calls "flags," equate to a lower Galam-Mauger percolation threshold, which in turn equates to a smaller percentage of the population needed as passive supporters for free percolation. In short, Galam argues that the more terrorists interact with a population, the more that group will be able to move through and among (percolate) that population, but does so without consideration of either interaction quality, which could be negative, or reciprocity.

Taking the opposite approach, others have turned the analytic perspective outward, seeking to find effective applications of network analysis for counter-terrorism. Kaempfer, Lowenberg, and Mertens (2005) address terrorism from an interest group perspective, examining the impact of violent acts on policy formulation and implementation as if those acts of violence were part of normal discourse. In such an examination, the object of analysis shifts away from the terrorist group to the group's actions and treats those actions as inputs for a larger political interaction. While the possibility exists that such an approach could open avenues for analysis of the dynamical processes involved, most studies continue the tendency to fall back on agent-centric reductionist and mechanistic approaches. Matthew and Shambaugh (2005: 619), for example, envision scale-free networks not as something a terrorist group may be, but simply as a tool a terrorist group can use: "Because scale-free networks are easy to access and navigate, they are useful to terrorists in several ways. . . ." The resulting view is one of network-based terrorists and non-network based terrorists, leading Matthew and Shambaugh to assert that network utilization will require terrorist groups to become more centralized and hierarchical – a contradiction the authors are unable to avoid or resolve.

The literatures on complexity and networks are clear on the long-term survival needs of any network. Links between nodes must be continuously strengthened or reinforced, with unproductive links allowed to wither and fade. New nodes must be established or acquired, with sufficiently strong linkages established with pre-existing nodes. The network must continuously grow, adapt, and self-pare in order to remain healthy and functional. Given the existence of competing networks, the self-

maintenance actions of growing, strengthening, and pruning are essential elements of an unstated survival strategy. The network must evolve. Static networks are absorbed by more aggressive and dynamic networks, wither away of their own accord, or are eliminated by stronger, more robust competing networks. It is the effective leveraging of emergence that provides the competitive organizational edge (see Halley and Winkler 2008:13).

The insights gained from viewing terrorism as a complex, adaptive, dynamical system raise important questions for understanding the process of terrorism. One of the most important questions involves the mechanisms by which terrorist groups grow, expand, and evolve. It seems intuitive that survival of the terrorist group rests, at least in part, on the extent to which the group can effectively counter personnel losses to adversarial action, attrition, and intra-group conflicts. Any number of studies answers this question by examining recruiting (Post 1984, 1987, 1990, and 2000 as well as Post, Ruby, and Shaw 2000), yet these studies fail to offer a complete and satisfying explanation since each examines recruiting efforts among those arguably predisposed to support and join the terrorist group. However, if a terrorist organization is to have a realistic chance of goal attainment, no matter how slim, it must not only address timely replacement of tactical and operational losses, it must also build a foundation of support that can help carry the group towards a larger presence and impact. This foundation, what Taylor and Horgan (2001 and 2006) call a supportive audience, is a necessary support element, providing logistics, funding, information, safe haven, and political capital in the on-going social dialogue as well as a ready pool of potential recruits. Without it, a terrorist group remains largely

isolated and marginalized, unable to rally support or stake an acceptable claim to legitimacy. In some manner, the terrorist group needs to reach out to the population, or some specified segment of the population, in an effort to build a functional support structure. One option is to use violence as a coercion and intimidation strategy – a tenuous proposition that must be carefully managed if it is to be sustained (Lichbach 1995) – while another is to develop and implement a persuasive strategy leveraging carefully focused violence and combining it with more positive, non-violent words and deeds. The later strategy would appear to be a much more tenable option for the group over the long term. With persuasion perhaps the best sustainable option, an important question then centers on the role and nature of terrorist communications.

A History of Miscommunications

Abrahms (2005) has referred to terrorism as a history of miscommunications. Indeed, much of the work done on terrorist communications has tended to focus on actual or perceived impact of those communications, rather than on the *intent* of the terrorist in engaging in a communicative effort. Interpretations are grounded in the familiar, putting terrorist communications into an interpretive framework rather than considering them suasive efforts designed to serve longer-term organizational goals. Similarly, many authors attempt to infer intent, yet only cast rhetoric and violence in more familiar terms associated with social norms. This has remained the case for decades, despite clear indications from terrorists themselves that the importance of

successful message conveyance cannot be overlooked.[28] Rather than explore the utility of terrorist-audience dialogue, scholars of terrorism gravitate towards an instrumental view of violence, often seeing violence as Gavin Cameron (1999) does: as an end in itself. Most hold to the notion that the terrorists' greater goal is accomplished by triggering harsh government counter-action[29] rather than seeing violence as but one part of a larger, more involved strategy.

One of the more interesting views of terrorist violence is that of Oots (1986 and 1989), who wrote of "entrepreneurial leadership of terrorist groups." As with any other political organization, Oots' terrorists must find effective ways of overcoming their collective action and free rider problems, necessitating the careful selection of appropriate incentives for attracting and retaining membership. The selection of incentives can quickly get out of control, as the history of the Basque ETA, Italy's Red Brigades, and Germany's Red Army Faction illustrate. As ETA shifted targets from agents of Spanish control to increasing numbers of unarmed Basque nationalist politicians and innocent bystanders in the 1980s, popular support for ETA not only waned, but anti-ETA demonstrations drew thousands (Zirakzadeh 2002). The Red Brigades suffered a similar backlash after kidnapping and murdering popular politician Aldo Moro, as did the Red Army Faction following their kidnapping and execution of Hanns Martin Schleyer.

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[28] Abrahms (2005), for example, cites the example of the Weather Underground and their awareness that the target audience must understand the terrorists' stated demands if political violence was to work.

[29] Many cite Carlos Marighelli's vision of revolutionary progress, in which terrorist violence provokes the regime into showing its "true colors" by overreacting, provoking in turn growing discontent among the people. This discontent is then expected to lead to greater support for the terrorist, now seen as the potential liberator from government oppression, as government security measures become increasingly oppressive.

When authors focus on communications by terrorists, especially since 2001, one significant theme has been understanding its potential and utility as a tool for counter- and anti-terrorism. Abbasi and Chen (2005), for example, endeavor to leverage a thorough syntactic analysis of terrorist communications to develop a better capability of correctly determining claim authorship, not simply by group but by individual speaker or correspondent, even when the communication has been written and relayed with the intent of deceiving message recipients. Similarly, the Dark Web Project at the University of Arizona (2008) uses a data-centric computational approach to assess *jihadi* presence on the Internet in order to help develop more effective counters to terrorist web presence. Similar efforts by Leeman (1991), Oots and Wiegele (1985), Weimann (2006), Dartnell (2003 and 2006), and Corman et. al. (2007) have presented terrorist communications by focusing on expanded utility for the group.

A few scholars have taken a broader, more theory oriented approach. Terrorism is, according to Abrahms (2005), a communications strategy, albeit one in which the primary intended audience is an inherently hostile audience – the targeted government. Tuman (2003) calls terrorism a "communicative process" which contains a rhetorical dimension beyond the simplicity of violent coercion. These authors hold fast to the idea that, as Tugwell (1990: 70) aptly phrased it, terrorists "are in the business of changing people's minds." This argument rests on the notion that violence is a communicative medium in and of itself, and that the dialogue of terrorism takes place in the public sphere (Ford and Gil 2001). Despite the valuable insights gained through such a perceptual and analytic approach, the terrorist

violence-as-communication literature too often focuses on its impact on society (see, for example, B. Miller 1987) or, like Tuman (2003), devolve into explorations of interpretive construction of the term *terrorism*.

Without specifically having terrorism in mind, Jervis (1970 and 1976) contributed to the subsequent literature on terrorism by showing that actors in the international system communicate demands through a process of signaling. Abrahms (2005) finds considerable utility in applying Jervis's ideas in a terrorism context, although in doing so Abrahms replaces nation-states with single agents which exemplify and inform international-level actor behavior, in this case President George W. Bush and al Qaeda chief Osama bin Laden. For Abrahms, signaling efforts by the two principal actors are ineffective in large part because perceptions and perceptual limitations prevent the effective transmission of signals. Others, such as Bhavnani and Ross (2003,) apply notions of signaling, arguing that violence, particularly against the state, is used by militant organizations to signal government weakness to a third party. Bruce Hoffman and McCormick (2004) offer yet another perspective in suggesting suicide terrorism is a form of strategic signaling meant to convey information about the group's character and goals.

Frames, the interpretive context for messages, have also proven useful for understanding aspects of terrorism. Nelson, Clawson, and Oxley (1997) note that frames have a significant impact on opinions by making some considerations appear more important than others. By asking respondents to react to Ku Klux Klan speeches and rallies through either a public safety or civil liberties frame, Nelson et. al. demonstrate that interpretive context has a potentially important role in reaction to

uncomfortable or abhorrent messages. Along a similar track, Druckman (2004) examined equivalency framing effects rather than issue framing effects, concluding that framing effects can be context sensitive as well as individual attribute sensitive. Brewer (2001: 49) further notes that framing effects depend on "how favorably one's response to it is," suggesting that the message content, whether rhetorical or violently kinetic, cannot stray too far from accepted societal norms without running significant risk of generating negative responses.

Considerable variance exists with respect to analyses of terrorist communications, despite widespread agreement that terrorist violence is intended to have an impact on social and political discourse. The rhetorical message's intent and purpose, however, is subject to considerable debate. One of the most thoughtful and unique interpretations is offered by Cordes (2001), who argues that what appears to be the terrorists' explanation and justification for acts of violence is actually an exercise in "autopropaganda," in which the terrorists endeavor to convinced themselves of the justness of their actions. The majority of work on terrorist communications, however, can be broken down into five general thematic areas.

Terrorist Communications as Violent Propaganda

Some of the earliest work on terrorism casts political terrorism as violent propaganda, violent political theater, or "propaganda of the deed." First credited to French anti-parliamentarian Paul Brousse,[30] the term "propaganda of the deed" has come to describe the way in which violence has been used, and been used by the

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[30] According to Martin (1985), the first reference to "propaganda of the deed" appeared in Brousse's August 1877 article "Propaganda of the Deed" in the Swiss *Bulletin de la Féderation Jurassiene*.

media, to publicize grievances, make demands, and raise political awareness of what the perpetrators of violence assert are pressing issues. Use of the term "propaganda of the deed" accurately reflects the purpose that some scholars, like Martin (1985), attach to terrorism, that of simple publicity. Fleming (1980) examined the use of violence for political purposes over time, and like Martin and a host of others, concluded that today's terrorism often finds or has ascribed to it justifications rooted in anarchist theories of the 1800s. Many authors have since adopted the phrase to describe the interaction between terrorists, their intended audience, their adversaries, and the neutral uninvolved public often caught in between. Today, much of the literature either refers to terrorism as a propaganda "war" between the government and a small group of disaffected individuals seeking violent change, or allude to terrorism's propaganda value for its perpetrators.

To scholars such as Wilkinson (1990), terrorism is little more than a propaganda[31] war, in which the terrorist is so convinced of the justness of his cause, and so rigid in his denial of alternatives, that the resulting violence denies neutrality and consequently spares none. He further argues that given the absolute nature of the

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[31] Propaganda, as used here, follows the definition used by Jowett and O'Donnell (1999: 6) in which propaganda is "the deliberate, systematic attempt to shape perceptions, manipulate cognitions, and direct behavior to achieve a response that furthers the desired intent of the propagandist." They also note that propaganda is a socially determined process in that it must generally fit within existing social, political, and cultural frames of reference if it is to have a chance of success. They also note that fear-based appeals are typically less effective, but their work has not included propaganda messages accompanied by terrorist violence or the threat of such violence. Choukas (1965) notes that propaganda takes two paths, exploitation of the limits of human reasoning and misdirection of thought, but the violence of terrorism may be seen as constituting a third path of exploitation of emotions. Most authors also note that when the propagandist is a non-state entity, he often starts at a disadvantage in that the most effective media sources are controlled by the state or those generally supportive of the state. Downing (2001), in his work on radical media, paints a portrait of the radical alternative media as a control-free venue for the dispossessed, but fails to consider the possibility that the radical media may be as controlled as state-run media, although with a far different political and social agenda. Nevertheless, Downing's treatment of the radical media offers an intriguing look at alternatives available to groups like terrorists, their supporters, and their struggles to find a place among the more dominating state-run or state-friendly mainstream media.

struggle, terrorists are able to use the propaganda of violence and rhetoric to shift

blame and responsibility to their opponent. These efforts to shift responsibility, and

deny legitimacy to their adversaries, set up a contest of give-and-take, with each side

seeking to convince a larger public it deserves support and assistance. In some

respects, this constant interaction, which Tuman (2003) has noted is always

bidirectional despite appearances, played out on televisions screens, in the papers, and

in other mass media venues, begins to resemble theater (M. Wilson 2000).

Some authors extend the terrorism-as-propaganda and terrorism-as-theater

analogies by casting it in marketing terms. Aaron Hoffman (2004), for example,

considers terrorism from a situational competitiveness perspective, noting that much

of today's terrorist violence and rhetoric are directed as much at competing terrorists

as they are against a specified state adversary. From this perspective, the ostensibly

neutral public constitutes a potential pool of support over which competing terrorist

groups and the government struggle for support and influence. Such a view is

incorporated by other scholars, including Rapoport (1977 and 2001c) and Cordes

(1987b and 2001) who note the critical need for terrorists to develop both internal and

external constituencies. While development of such constituencies is considered

critical to terrorist group survival, it carries with it the seeds of a potential backlash by

the very individuals the terrorists seek to reach. Rapoport (1977) was one of the

earliest to note this possibility in the event the terrorists fail to establish some form of

moral or ethical compact with the population targeted as a constituency. Cordes

(1987b and 2001) reinforces understanding of this need by also noting that the

development and care of an internal constituency is just as important, leading her to

delve extensively into terrorist writings for a greater understanding of the "autopropaganda" role of terrorist rhetoric. Others, however, focus more on the kinetic conflict between terrorist and government and assert, as Bruce Hoffman (1997) does, that many terrorists deliberately hide their authorship of violence in order to avoid the expected counter-attack of their adversaries. Others terrorists, particularly those responsible for catastrophic acts of violence, do not claim credit, according to Hoffman, because they believe they have sufficient standing that their message is effectively delivered without the necessity of claiming responsibility.

Bruce Hoffman's assertion of reasons for claim-less terrorism appears to be at odds with the work of other scholars, such as Rapoport and Cordes. A closer examination of terrorist acts over the past few decades, however, tends to offer confirmatory evidence for both perspectives. Many terrorist groups issue claims of credit for acts of violence, at times even asserting responsibility for those acts carried out by others. This may be a way for smaller, lesser-known groups or subgroups to begin the process of generating awareness and staking a claim to legitimacy. Larger, more established terrorist groups, on the other hand, may fall closer to Hoffman's model and, because of an established pattern of actions over time, may feel that their message is understood by intended audiences despite the lack of a public claim of responsibility. At times, too, some terrorist groups use a variety of names suggesting the existence of multiple terrorist groups where one or a few actually exist. In any of these cases, the terrorists seek to manipulate the media, and its propensity to focus attention on the extraordinary, the visually remarkable, and the emotional, in order to

achieve a desired effect while avoiding risk or increasing uncertainty among its

adversaries.

Terrorist Communication as Media Manipulation

Perhaps even more so than considerations of terrorism as propaganda of the

deed and violent political theater, a media manipulation theme has dominated the

literature on terrorism for decades. Most authors,[32] like Martin (1985: 135), have

been very blunt in stating that "[a]ll that terrorists want is a larger audience, and they

have learned to exploit media's own modus operandi to maximize their reach," and

arguing that terrorism is little more than a tool for media manipulation. He does note,

however, that the manipulation is not unidirectional in that terrorists and the media

exploit each other for their own purposes. Wilkinson (1997) echoes Martin, arguing

that terrorists and the media have a symbiotic relationship, calling terrorists' media

manipulation cynical and opportunistic. Despite the long history of terrorist use of the

media, their efforts are not always successful in achieving long-term goals and

objectives. Nacos, Fan, and Young (1989) note that violent acts spread across the

mass media offer terrorists tremendous possibilities for getting attention and airing

grievances, but fail them more often than not when the terrorists' goals of gaining

legitimacy and earning respect are considered. The work of Nacos and her colleagues

highlights the media's role in immediate representation of acts of violence, but

suggests that longer-term sustainability and depth – needed to develop, establish, and

reinforce respect and claims of legitimacy – are lacking in the media's treatment of

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[32] Some authors who have addressed the relationship between media and terrorists include Herman and Chomsky (1988); Curan, Gurevitch, and Woollacott (1981); Bandura (1986); Sloan (2000); Shamir and Shikaki (2002); Alali (1994); Farnen (1990); and countless others.

terrorist violence. Indeed, Crelinsten's (1989) work demonstrates that even initial media representations of terrorism are fundamentally flawed, from the terrorists' perspective, in that they do not offer an accurate representation of the nature and extent of terrorism, terrorists, their demands and expectations, or their grievances. Coverage is, as Crelinsten (1989 and 1997), Nacos (1994 and 2000), Nacos, Fan, and Young (1989), and Abrahms (2005) note, highly selective and frequently incident-oriented, particularly when the incident is accompanied by stunning visuals.

Some scholars, such as Irvine (1992), have examined the writings of terrorists and concluded that the issue of media manipulation is rarely as straight forward as it appears. Irvine argues for a more dynamic examination of terrorist writings, and suggests that such a treatment demonstrates terrorist use of the media changes over time. Initially, Irvine suggests, terrorists use the media to gain attention and to establish themselves as political actors that matter. As the group gains confidence and standing, media use shifts in an effort to redirect attention to the long-term goals and strategies of the group. Tuman (2003) takes a different track and notes that terrorist use of the media varies, depending on whether the terrorism is directed from above (i.e. state- or state-sponsored terrorism) or whether the terrorism comes from below. In this perspective, violence escalation is typically a manifestation of need, real or perceived, for greater publicity. By careful manipulation of the timing, destructiveness, and direction of violence, Tuman suggests that the terrorist group uses the media's proclivities of coverage to adjust, as needed, media exposure in ways quite similar to more traditional political campaigns.

Recent years, however, have witnessed a change in media manipulation, with terrorists and their supporters more in control of both content and distribution of their messages. By using the Internet, technology-savvy terrorists have been able to bypass the traditional mass media, with its attendant self- or government-imposed censorship and its limited attention span, and begin the creation of a new on-line community of interest more amenable to the terrorists' message. Mexico's Ejérsito Zapatista de Liberación (EZLN; the Zapatistas), for example, opened what Ford and Gil (2001: 201) call "a new sphere of communicative action" in their struggle against Mexican authorities. For some observers (Ford and Gil 2001; Bob 2005), Zapatista use of the Internet was critical for not only the group's successful struggle in Chiapas State, but critical for their very survival in the face of overwhelming Mexican monopolies of both force and media access. By directly addressing "subaltern counterpublics" around the world through the Internet, the EZLN built global communities of interest that allowed them to overcome the pressures applied by state authorities by generating both national and international attention in the struggle. In a similar fashion, the Revolutionary Association of Women of Afghanistan (RAWA) has used the Internet to begin reshaping the social and cultural dialogue about the role of women in Afghan society (Dartnell 2003). While RAWA's impact in Afghanistan remains limited due in part to the exceptionally low rate of Internet penetration, beginning a dialogue with outsiders who may have an indirect impact on Afghan society through their interactions with their governments offer the potential for significant social and cultural change.

Terrorist organizations have begun to grasp fully the potential advantage of effective use of the Internet. According to Weimann (2006), less than half of 30 terrorist groups surveyed in 1998 maintained a presence on the Internet. By the end of 1999, almost all did and by the end of 2005, Weimann had counted over 4,300 separate web sites serving terrorist groups or their supporters. As terrorist groups make greater use of cyber capabilities, most authors have worried about terrorists using interconnected computer technologies to attack critical government processes and infrastructures. Dubbed *cyberterrorism*, this literature explores and perpetuates a fear of terrorist transition from purely kinetic violence to violence that is virtual albeit with a significant kinetic outcome. Weimann (2006), and Arquilla and Ronfeldt (1999) are notable, however, for pointing to a much greater potentiality for terrorists tied to the use of cyberspace for recruiting, organizing, planning, and coordinating. Offering the most detailed examination of terrorist use of the Internet to date, Weimann (1987 and 2006) notes that terrorists most frequently target four key audiences for Internet enabled activities: their supporters, their presumed constituency, their adversaries, and international public opinion. For the terrorist organizations Weimann has observed, kinetic attacks appear not only counter-productive, but also operationally risky. Rather than open themselves to effective countermeasures which could significantly impair group operational effectiveness, Weimann finds that Internet savvy terrorists see fundraising, rhetorical attacks against rival terrorist groups, implementation of scare campaigns designed to increase public anxiety, and displacement of responsibility for violence as primary productive outlets for Internet use. Other frequent uses recorded by Weimann include campaigns to

dehumanize and discredit targets and adversaries, data gathering, networking among like-minded groups and individuals, recruitment and mobilization, and operational command, control, and coordination.

Terrorist Communications as Structural and Environmental Manipulation

For some scholars, media manipulation, while present, fails to capture the full range of efforts and intents that drive terrorist communications. For these authors, terrorists' attempts to manipulate through word and deed extend to significant structural or environmental elements of their operational milieu, making for a much more pervasive and involved communications effort. For Crelinsten (2002), violence is a communicative effort that, intended or not, interacts with other forms of social and political dialogue, moving terrorism from an aberrant peripheral drama to a central role in national political and social life. As such, Crelinsten maintains, terrorist violence and communications have an inherent agenda-setting function that affects all actors, particularly with respect to the dynamic relationship between the controlled in society and the controllers. This agenda-setting function not only shapes political and social dialogue, but also defines and directs frames of reference for social interaction, thus bounding communications modes for the controllers and the controlled by the level and breadth of conflict.

Others, such as Tololyan (2001), Sant Cassia (1999), Downing (2001) and Taylor and Horgan (2001), examine a more fundamental structural and environmental impact by addressing cultural impact and myth building. In one view, dominant cultural narratives "overdetermine conditions that help produce terrorism and are in

turn reanimated by it" (Tololyan 2001: 32), helping terrorism produce "new heroes for old stories." Hogenraad, et. al. (1995) agree, noting that the myth created by the act of terrorism persists beyond the immediate, helping reformulate an operative cultural narrative incorporating a new mythic frame of reference. Not only does terrorist action produce, at least for some, a new generation of heroes and role models, it also helps legitimize violence by referencing significant cultural and historic moments (Sant Cassia 1999). In leveraging the dominant cultural myth, some terrorist groups are seen as the new heroes of an old struggle. Ethnically based groups, such as the Irish Republican Army, Armenian Secret Army for the Liberation of Armenia, and ETA frequently attempt to consciously tap into the prevailing cultural myths in order to establish and maintain political and social standing and to achieve a degree of legitimacy. In more religious societies, the need to establish and maintain connections to cultural history and myth is of lesser importance due to the presumed or claimed divine endorsement of the struggle (Downing 2001). With the moral authority of the appropriate deity co-opted by a group engaged in violent struggle, resistance to calls for support is lowered, given the deity's presumed acknowledgement of the "truth" of the struggle (see also Taylor and Horgan 2001, Ezekiel 1995, and Bjørno 1995a and 1995b).

Shaping the political reality of society, particular a secular society, is not as easy and is fraught with potential pitfalls. Several authors have examined terrorist communications in the context of intent to change the dominant political reality (Fortin 1989; Leeman 1991; B. Miller 1987; Barkun 1996a, 1996b, 1997, and 2000; and Van den Broek 2004) and find that change is particularly hard to affect without a

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readily attentive and acceptant audience. Rather than reliance on "truth" or moral superiority of message, intent, and messenger, as is often seen in highly religious contexts, secular terrorists in non-religious environments tend to focus their persuasive efforts on undermining their adversary's legitimacy (Kelly and Mitchell 1981; Gerrits 1992). Establishing legitimacy is often seen as an essential precondition for success, even if only expressed in terms of public safety, since legitimization provides context and meaning for acts of violence (see especially Barkun 2000; B. Miller 1987; Shamir and Shikaki 2002; and O'Boyle 2002). Further, the effort to legitimize violent struggle, if done effectively, can still benefit the terrorist even if it fails to sway the intended audience:

> The legitamation of struggle fought with methods which are not approved of by the majority of the population may nonetheless be effective if it can be made plausible that this struggle does not just serve partisan goals but aims at defending more "universal" values. If a just cause is defended by the wrong people or with wrong methods, many observers feel reluctant to censure the means or those who employ them. (Van den Broek 2004: 729)

Some terrorists, however, appear to exhibit a greater need for self-expression and self-satisfaction, finding greater purpose in shaping their own perception of reality. To Gerrits (1992), terrorist publicity fulfills just such a role, soothing and empowering the terrorist to achieve his own psychological objectives. Success, however, can be troublesome, particularly given violent extremists who know of no other way of life (Bell 1998; Ezekiel 1995), leading Martin (1985) to suggest that some terrorists may change goals, tactics, and targets in order to avoid goal achievement, especially when goal achievement reduces or eliminates the group's

previously stated *raison d'être*.[33] Other terrorist groups have used both violence and rhetoric in an effort to expand the boundaries of social and political dialogue, stretching the operative environment beyond the borders established by the original conditions and grievances that led the group to begin armed insurrection. Some terrorist groups, particularly secular groups in Europe in the 1960's and 1970's, failed to establish a domestic base, leading many to see joining the larger international revolutionary movement as the path to success. Others, such as Italy's Red Brigades, had a stable domestic constituency but misjudgment or arrogance led them to embrace the internationalist cause to the detriment of maintaining their domestic constituent base (see Rapoport 2001c; Silke 2000; and Ginges 1997). In other instances, changing cultural perspectives appear to have prompted perceptual changes among the terrorists and their recruits, with later joiners sometimes adopting much harsher and unyielding attitudes about the desirability of violence as a key component of the political dialogue (Zirakzaden 2002).

Terrorist Communications as Rationalization and Justification

The psychological pressures associated with participation in terrorism, the dissonance stemming from deliberate violation of societal norms and expectations, and the constant and persistent fear borne of outlaw status argue powerfully for the development of effective cognitive coping strategies. Efforts to reduce levels of

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[33] Indeed, this criticism has been levied repeatedly against Hizb'Allah, which originally claimed to exist and act in order to force Israel to leave south Lebanon, which it occupied from 1982 to 2000. Following a disastrous occupation, Israel withdrew its forces from south Lebanon in 2000. Rather than recognize the removal of its stated reason for existing, Hizb'Allah sought to redefine geographic realities. Despite agreement by the United Nations, and the governments of Lebanon, Syria, and Israel that a small parcel of land known as Sheeba Farms is properly Syrian territory but occupied by Israel, Hizb'Allah continues to press its claim that Sheeba Farms remains Israeli occupied Lebanese soil.

cognitive dissonance have been the subject of a rich and varied literature on terrorism.

Decades ago, terrorist communications were frequently seen as rather simplistic

efforts by terrorists to explain, rationalize, and justify their violent activities, going to

great lengths as some have observed to deny they are terrorists (Wilkinson 1990 and

1997; Bandura 1986; Cordes 1987b; and Leeman 1991). In recent years, the pressure

to explain has increased, according to Cordes (2001), given the growth in

participatory avenues for redressing grievances. As a result, she argues, some

terrorists may feel so great a need to establish a claim to legitimacy that their own

"autopropaganda" leads them to lose touch with reality (see also Zirakzaden 2002).

Rationalization and justification of terrorism would be expected to serve a

critical role in the terrorists' dialogue with both their adversaries as well as their

presumed or potential constituencies. A number of authors, however, have offered

compelling arguments that terrorist rationalization discourse is more often than not

directed inward (Jowett and O'Donnell 1999; Van den Broek 2004), designed to

assuage the terrorists' own sense of guilt (Oots and Wiegele 1995, citing work by

Murray S. Miron). Jowett and O'Donnell (1999: 378) go so far as to assert conscious

intent arguing, "[e]xternal propaganda may be created for internal consumption.

Displays of aggression toward an enemy may not faze the enemy, but they can bolster

morale at home." If Jowett and O'Donnell are right, it would mean that groups

engaged in such behavior may be significantly undermining their own efforts to

reshape the political and social landscape.

Most examinations that see terrorist communications as a rationalization or

justification tool expect it to be directed outward from the group, intended to

establish, assert, or reinforce claims of moral standing. Muhlberger (2000) sees a

strong rationalizing impact of moral reasoning, but notes that questions of morality

have little influence on group recruiting or participation. Moral-reasoning based

arguments by terrorists, therefore, may serve a greater purpose in legitimating

terrorists and terrorist violence and in precluding possible counterclaims. Since

terrorist violence engenders norm violation, terrorist rhetoric is also seen as an effort

to redefine societal norms in such a way that the violence of the group is in some way

tenable within the context of dominant normative values (Shannon 2000). Norm

redefinition, or at least increasing norm ambiguity, offers the terrorist the opportunity

to better shift responsibility for violence either to the group's adversaries or to its

victims. In shifting responsibility, terrorists address both internal and external needs,

fitting violence into the existing political discourse and absolving the terrorist of both

responsibility and guilt (Drake 1998a and 1998b). At its most successful, terrorists

effectively link norm ambiguity and shifted responsibility to ethnic or cultural

survival, leading to what are often more ferocious struggles (Rapoport 2002).

Terrorist Communications as a Window on Mind and Moods

One segment of the terrorism literature emphasizes individual psychology in

asking why the terrorist acts as he does. This work seeks to explain what is often

characterized as the randomness, the senselessness of terrorist violence and searches

for explanations from among the words of the terrorists. Many scholars are often

reluctant to study the writings of terrorists (Rapoport 2001c), yet according to Cordes

(2001) and forensic linguist Roger Shuy (Kovaleski and McCaffrey 2002),

examination of texts produced by terrorists opens a window on both their thinking and their mood, offering clues to better understand individual and group dynamics as well as self-perceptions. Probing the minds of terrorists through the poorly structured and presented medium of their statements and memoirs is difficult, particularly given the differences in beliefs found between the terrorist and both his audience and the scholar seeking to make sense of the texts (Hogenraad, et. al. 1995). The picture revealed, however, frequently reflects a single-dimensional view of the world, where there are stark differences between right and wrong, justice and injustice, as seen by the terrorist (Kassimeris 2001; Rapoport 2001c), reflecting a rigid view of morality which colors and frames the terrorist's perceptual world view.

For others, the communicative elements of terrorism offer much needed insights into the thinking of the terrorist. While some terrorist communications are held to serve a primary purpose of propaganda and publicity and a secondary purpose of gratifying more personal psychological and emotional needs (Pluchinsky 1997), other communications are held to offer information insights into operational aspects of the terrorist decision making. Ideology plays a critical role in terrorist target selection, also finding expression in rhetoric and, when combined, offers an opportunity to examine and assess the terrorists' interpretation of the world and associated behaviors (Drake 1998b). Taylor and Horgan (2001) also find value in examining the linkages between terrorists' beliefs and interpretations, on the one hand, and their violent acts, on the other. This process of chaining, they argue, offers one of the best available windows to the terrorists' internal logic and the way in which that logic drives violent behavior. Calling ideology a "multifaceted force

influencing behavior," Taylor and Horgan (2001: 48) assert that "the extent to which ideology controls and influences our behavior may be seen as something apart from particular ideologic [sic] prescriptions, which contain as it were the content of a particular ideology." It stands to reason, though, that ideology may not play a critical role for secular terrorists, prompting scholars like Tessler (2003) to argue that attitudes toward politics, government, economics, and other political and economic factors are more relevant than other cultural predispositions or religious beliefs. Despite disagreements centered on differences between secular and religious groups, terrorist communications are held to offer otherwise difficult to divine insights into the perceptions and thought processes of terrorists.

Finding the Gaps

Other than recruiting and establishing claims to legitimacy, most views of terrorist communications focus on what are presumed to be the manipulative uses to which they are put. Terrorist communications are seen as fulfilling a very limited role designed to artificially define "the struggle" while serving deep personal and organizational needs. What is not addressed is the use of communications to establish and maintain beneficially interactive relationships with a designated audience in order to build and service a supportive constituency. In the language of complex systems, the literature fails to address the emergent properties of terrorism, particularly the role played by communications.

When terrorist or insurgent communications are examined as an effort to sway a given audience, the focus tends to rest squarely on single examples and case studies.

William Miller (2000), for example, addresses the communicative needs of insurgent

groups by the historical record of Shining Path, the Khmer Rouge, and the Viet Cong,

emphasizing the role of communications as one of several tools to build a popular

base of support. Rural and urban operational environments, he notes, pose unique

challenges for insurgent groups, with the spatial openness of rural settings offering an

easier path toward institution building success. Urban groups, lacking the opportunity

to establish effective territorial control, resort to coercion through violence as a means

of population control. The freedom to operate and establish both territorial control

and administrative institutions offered by rural areas does not, however, offer

necessary and sufficient conditions for non-coercive popular support, as the actions of

the Khmer Rouge and Shining Path, and to a lesser extent the Viet Cong, amply

illustrate. Audience ambivalence also complicates the situation, leading many groups

to adopt a mixture of coercive and non-coercive tactics in an effort to win popular

support.

While Miller's work, and that of similarly oriented scholars, adds considerable

depth to understanding some of the communicative choices made by terrorists and

insurgents, it offers little to explain the mechanics of the communicative interaction

between terrorist and population. One approach that has addressed communicative

interaction is integrative complexity, most notably in terrorism studies by Suedfeld

and Leighton (2002) and Liht, et. al. (2005). In both studies, integrative complexity, a

measure of individual or group information processing based on differentiation and

integration,[34] is used to examine the communications between two specified parties engaged in an interactive dialogue. With their focus on two-party interactions, integrative complexity studies offer interesting insights into negotiations between insurgents and their government opponents and into the exchanges of dialogue between leaders of parties in conflict. These studies do not, however, open many new vistas with respect to terrorist communications directed at a more ambiguous, ill-defined group of often unwilling correspondents. In situations where there are multiple parties involved directly or tangentially, with participant fluidity, multi-directionality of exchanges, and characterized by competitiveness, integrative complexity offers some intriguing possibilities which have yet to be explored.

Like integrative complexity studies, communications studies have also offered some insights, although the marketing literature is more easily applied to the terrorist-audience interactive dynamic since, unlike integrative complexity, it does not limit the number of participants to two directly interactive entities. Among this literature, Grunig's (1976) situational theory of publics seems most applicable to an examination of terrorists' efforts to build and maintain a supportive audience through verbal and symbolic speech. For Grunig, two dimensions of an individual's recognition of situation stand out as critical components: the extent to which a problem is perceived and the degree to which constraints, or the expectation of constraints, serve to limit the individual's subsequent behavior. The problem recognition dimension, in this context, is the necessary factor in altering an individual's life trajectory. Without recognition of a problem, individuals would be

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[34] Differentiation is taken as the presence of two or more perceived elements, dimensions, or points of view on a given subject, while integration is taken to mean the degree to which those elements are seen as related to each other.

expected to carry on with their lives without adaptive behavioral change driven by interpretation of external situations. Problem recognition changes the individual's perception of his existence such that alteration or change in some form becomes a more desirable course of action. The recognition of constraints, however, provides a feedback mechanism such that the desirability of change may no longer carry sufficient weight to warrant action. Only when the desire or perceived need for change outweighs the expectation of constraints will action result. Extended to the organizational level, Grunig asserts that organizational behavior is affected by problem recognition and constraint recognition in much the same ways as individual behavior is responsive to perceptions of immediate and likely future situations.

Put into a terrorism context, Grunig's situational theory of publics offers immediate application in examining terrorist group efforts to convince a population, or some segment of one, to set aside fears of negative incentives and risk and act in support of the group. For an audience targeted by a terrorist group's communicative strategy, the decision to support or join the group is fraught with danger. Any action in support of a terrorist group can be expected to attract unwanted attention from the government and, if the activity constitutes enough of an irritant, subsequent retaliatory or law enforcement actions would be expected to place the individual in jeopardy. Convincing that targeted public to act on behalf of the terrorist group, therefore, would require the group to find a way to alter the targeted population's perceptions of problems in need of redress and their expectation or recognition of constraint and risk. Using violence for this purpose, as Lichbach (1995) and others

have noted, is often either counterproductive or takes inordinate amounts of time and energy to maintain for too little benefit.

A terrorist group possessing a degree of marketing savvy, however, might recognize the potential for diffusing their operative ideologies and goals among a targeted population. Diffusion studies seem to offer potential applications given their emphasis on the transference of innovations through a population, yet researchers in the field have narrowed the scope of inquiry rather than seeking broader applications. As Rogers (2003: 39) puts it:

> Diffusion studies now display a kind of bland sameness as they pursue a small number of research ideas with rather stereotyped approaches. The narrow perspectives of diffusion scholars in an earlier era have been replaced by an unnecessary standardization in contemporary diffusion research approaches. Perhaps the old days of separate and varied research approaches were a richer intellectual activity than the present era of well-informed sameness.

Pioneered by Rogers (1962), study of the diffusion of innovations offers a detailed exploration of the structures, institutions, and processes that help determine whether and at what speed new ideas, tools, and processes can spread throughout a social system.[35] As a "process of social construction," Rogers further notes that the nature of the propagation medium – society – can either help or hinder the spread of an innovation. In decentralized systems, innovations that are seen as fitting more closely with a potential adoptee's needs and concerns are more readily adopted, since the adoptees feel more in control of the change process. In a centralized system, where

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[35] Rogers (2003: 5) defines diffusion as "the process by which an innovation is communicated through certain channels over time among the members of a social system." Rogers takes great pains to explore the conditions conducive to innovation diffusion, the characteristics of the agents spreading or receiving news of an innovation (and the likelihood of adoption), and the characteristics by which such innovations can be described.

individuals are likely to feel less in control, diffusing innovations tend to address more the system's needs than their own local needs. While diffusion in a centralized system can be effectively promoted by social leaders, decentralized systems present a greater challenge since requisite technical expertise and coordination are more difficult to apply. In the terrorism context, this difficulty calls for the group seeking to spread its particular world-view to establish and maintain more effective and emotive communications practices.

While the diffusion of innovations literature tends to emphasize innovation's effects on uncertainty,[36] a new political perspective, such as that offered by the terrorist, tends to increase uncertainty through its combination of radical change and violence. A successful "innovation-diffusion" campaign by a terrorist group, then, might be expected to address the uncertainty over the possibility of government reaction rather than that stemming from the terrorist's program. Clifford Bob (2005), in his study of the marketing of rebellion, notes that at different scales, the successful diffusion of an innovation offers a critical key for a rebellion's success. In Bob's work, however, the focus shifts to indigenous rebels seeking to attract and win a supportive audience on a global scale, focusing primarily on non-governmental organizations (NGOs) that might prove instrumental and providing resources and public relations advantage at the international level. As Bob (2005: 30-31) explains:

> . . . savvy local insurgents begin their quest for aid by "segmenting" the market, directing their appeals to potential supporters whose identity and goals approximate their own. . . . Even then, movements must frame themselves to boost their chances of support. . . .

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[36] According to Rogers (2003: 165), "the innovation-diffusion process is essentially an information-seeking and information-processing activity in which the individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation."

As a first step, movement activists strip their conflicts of complexity and ambiguity, projecting a stark picture of virtuous struggle against a villainous foe . . . . They link their plight to well-known and emotionally charged events, hoping thereby to vanquish the indifference of distant audiences. . . .

Bob's work on the marketing of rebellion comes closest perhaps to exploring the mechanisms by which terrorist groups seek and maintain a supportive constituency. As such, his work offers tantalizing possibilities that seem to offer explanations, but its direct applicability to terrorism is necessarily limited due in large part to differences of scale and orientation. Bob's insurgents look outward, to the much larger arena of global public opinion and to the operations and activities of NGOs which operate internationally. They seek, and are often afforded, a degree of legitimacy and standing as claimants to the social and political dialogue. These insurgents willingly modify their goals, objectives, tactics, and operations to win the favor of targeted NGOs and publics, many of whom have little or no direct stake in the conflict. Terrorists, on the other hand, typically have no recognized standing save that afforded by state sponsors and allied organizations. These groups also tend to have a much more limited scope, narrowing the sphere of conflict rather than expanding it.

Terrorism studies are left, then, with a number of possible explanations for the question of why some groups survive over time and others enjoy only a brief, limited lifespan. Many explanations have been put forth in the literature, including those tied to the effectiveness of government counter-action, internal group dynamics, operational and organizational competency levels, and the actions of rival groups. Yet these explanations are limited, with significant gaps remaining in the body of

knowledge. Why some terrorists fail has been well explored, virtually nothing has

been written about why others succeed.

Chapter 3: Building a Network-Based Affinity Model

The literature of terrorism leaves a number of questions unanswered. Significant insights into the identity of terrorist groups, their functioning, their operations, and their struggles against others are available for anyone with the time and energy to sift through a rapidly growing collection of scholarly work. Left largely answered, however, are questions addressing the dynamics of process, the complex interplay between terrorist and others, and the evolutionary progression of terrorist groups from small conspiracies, through initiation and conduct of violent action, to final outcome. Most terrorist groups enjoy limited lifespans before being defeated by their adversaries, withering from neglect or incompetence, or being absorbed by larger, better-organized, more robust kindred groups. A few, however, grow in numbers, influence, and capability, emerging at some point as an insurgent group capable of seizing, controlling, and administering territory, or emerging as a mass movement capable of mobilizing sufficient numbers to effectively challenge government authority. What remains woefully lacking are insights into the evolutionary dynamics of the terrorist groups themselves, particularly with respect to their need to generate some minimal level of public support that will not only offer the opportunity for maintaining operational viability, but also to establish the necessary preconditions for evolutionary growth.

Process dynamics, particularly evolutionary progression, are largely ignored in the terrorism literature. One of the principal reasons for this deficit may be that commonly held analytic models of terrorism focus attention on interactions between individuals, decision making cost-effectiveness calculations, or the group's ability to

withstand governmental counter-action. Where the literature does address change it typically does so from a severely limited perspective which posits terrorism, or the particular aspect being examined, as if it were an isolated, independent closed system. To better understand terrorist groups and the differences that help determine which groups might survive, expand, and perhaps succeed, a network model of the *process* of terrorism is needed, one that directs attention to the evolutionary characteristics inherent in the interaction between all components of the system, the system's structures, and the larger, more encompassing inclusive environment.

Present models of terrorism are most often reductionist, isolating selected actors or characteristics and examining each with little or no consideration of how that selected component affects the overall system environment and is, in turn, affected by that same environment. As such, these models construct a closed system in which two or more unique adversaries vie for effective control of the system.[37] In this kind of model, actions and reactions are seen simply in kinetic terms, with physical and emotional impact extending beyond the immediate act albeit with limited scope and focus. Further, control of the system is taken as the expected prize sought after by unitary agents.

A network model of terrorism is more fluid and adaptive than existing models. The network perspective recognizes a multiplicity of actors[38] on multiple levels, whether directly involved or not, competing in an open, dynamic system, all having

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[37] In this work, Axelrod and Cohen's (2000: 6-7) definition of *system* is used. It is, they write, "one or more populations of agents . . . , all the strategies of the agents. . . , along with the relevant artifacts and environmental factors. . . ."

[38] In the discussion of systems, *actors* and *agents* are not used interchangeably, although in some literature this may be the case. This discussion holds to the convention that *agents* are individuals, groups, structures, institutions, interactions, or situations which act or affect other system components in any way, whether that action is intentional or not. *Actors*, on the other hand, are a specific subset of agents, representing only the humans, individually or collectively, in the system.

some degree of impact on the system itself, its environment, and structures. Any action not only changes an actor's position relative to other actors and environment, but also changes the environment itself. Further, each actor's activities, and the environmental changes each brings, affect the perceptual and interpretive cognitions of other actors. Since every action changes, in some way, the relationships between actors and the environment, the system is in a constant state of flux. This quality makes a systemic return to some arbitrary prior status or condition impossible since no condition of equilibrium exists. New models of terrorism's dynamics will need to find effective ways of incorporating persistent flux and inherent fluidity if they are to allow further progress in understanding terrorism.

The present work moves in that direction by envisioning terrorism in a network context, in which terrorist group, government, and various publics constitute nodes within a growing and evolving network defined by its structure and by the dynamics of interactions between nodes. Specifically, network environment and characteristics are explained, focusing on the basics of nodes, links, and context. In addition, the network environment's impact on the relative fitness of constituent nodes, and the nodes' impact on overall system fitness are explained. Finally, a hypothetical evolutionary curve is described, explaining how the network perspective of terrorism offers a framework for understanding terrorism in an evolutionary context.

Modeling Dynamic Systems

Modeling a dynamic relationship is fraught with difficulties, particularly given the model's fundamental role of offering a simplified representation of reality. An

effective model serves one of three basic purposes: as a predictive tool, allowing for

testing and evaluation of a given proposition; as a demonstration, allowing the

modeler to show a proposition or relationship is possible, or; as an advisement,

allowing for the suggestion of ideas for further study and evaluation (Holland 1998).

When systems are complex and agents within the system include humans, the

difficulties already inherent in modeling are amplified given the human potential for

irrational behavior and subjective decision making (Campbell and Mayer-Kress 1997;

Bonabeau 2002). The resulting output of model-based analysis offers the potential for

widely divergent directions spanning the range of qualitative and quantitative

outcomes. Because models of human interaction can become large and unwieldy very

quickly, the most common approaches used are consolidation of individual behaviors

– aggregation – and the selection and use of a single actor exemplar. While the

aggregation and exemplar approaches work well enough for the study of broadly-

defined population tendencies, their application in a dynamic and complex system

perspective is limited:

> When there are large numbers of agents, simple or not, the "move tree" (the range of possible interactions) far exceeds the already enormous move trees associated with checkers or chess. Because the actions of the individual agents are conditioned by the immediate surroundings (other agents and objects in the environment), there is no easy way to predict the overall behavior by looking at the behavior of an "average" individual. The difficulty increases enormously when individual agents can learn or adapt. Then an agent's strategy is not only conditioned by the current situation, it can also change over time . . . . As the difficulties increase, so do the possibilities for emergent behavior. (Holland 1998: 118)

Success in modeling systems with emergent behavior rests on an ability to identify

the processes – not the agents – that are most relevant to the questions being asked

and the most appropriate level at which to examine those processes. Modeling

complex relationships, like that found between terrorists, government, and audience, necessarily needs to push beyond traditional linear cause-and-effect assumptions into more intuitive, non-linear approaches that allow for the leveraging of emergent properties in a simple, qualitative approach (Saperstein 1997; Campbell and Mayer-Kress 1997).

Applying Systems and Network Theories

Systems can be described as either closed or open. Closed systems exist in isolation, containing all necessary resources within itself and, as a result, needing no periodic interactions or replenishment from external sources. They are self-contained, with constituent agents and objects fulfilling unique and specifically delineated roles. Inputs, beyond those which initially populated the system, are extremely limited, if present at all, and have virtually no measurable effect on system dynamics. Open systems, in contrast, have interactions across its borders, gathering inputs from the surrounding environment and providing some form of output to that environment. Open systems have the potential to retain or increase systemic robustness through cross-boundary interaction where closed system counterparts invariably tend toward increased entropy and the resulting permanent loss of available energy and system degeneration. When dealing with human society as a system, either an open or a closed system can be envisioned, depending on how expansive the domain is taken to be. Including all humans in a global society would represent a closed system given the lack of interaction with structures or agents external to the system. But that expansive view serves no useful purpose since it is too broad to offer insights into

interaction dynamics. For the opportunity to achieve such insights, a smaller, more localized level of analysis – and hence open system – is needed.

Actors in open systems react to the presence and actions of others as well as to changes in environment and structure. Specialization may be present, but given the role of external agents and stimuli, an open system tends to display both a lack of effective hierarchical management and a complex interdependence between agents and attributes. While there is interdependence in this system there tends to be a pronounced lack of generalized internal dependency, particularly given the presence of regulatory feedback mechanisms. These feedback mechanisms help regulate and moderate goal-seeking behaviors, yielding a system in which the unchecked increase in entropy is mitigated, retarded, or at times eliminated. Given the multiplicity of resources and stimulus inputs, there is an equifinality to the system, a range of alternative means by which a given outcome might be attained. At the same time, there is also a mutlifinality to the system, where a multiplicity of results stemming from the same inputs is possible. In complex systems, this multifinality is a hallmark of emergent behavior.

These systems are notable in their failure to meet the necessary conditions of linearity (see Beyerchen 1998 and Czerwinski 1998). The simple combination of inputs is normally expected to yield a predictable output such that the output represents the sum of inputs. Yet with an open system, outputs tend to be more than the sum of inputs, violating the principal of proportionality. By the same token, such systems are greater than the sum of their constituent parts, leading to a violation of the principal of additivity. With disproportionality between inputs and outputs,

coupled with the system's violation of additivity, the open system defies replication. That is, given the same set of resources, structures, agents, and inputs, an open system cannot be created exactly like another nor created as an exact replica of what once was by virtue of the environmental changes brought about by each and every action (Jervis 1997, 1998). Open systems, then, violate the principle of replication. Finally, the principal of demonstrability of cause and effect is violated in that the inability to replicate the system, its non-additivity, and its disproportionality prevent the identification of specific causal factors leading to a given observed effect. Cause and effect are left largely ambiguous, difficult to define and describe given the range of possible interaction combinations which could yield a single result. The system is consequently characterized as unpredictable.

Open systems are defined by structures, agents, and interactions within a defined boundary, each of which having functional relationships with others in the system.[39] The system's structure, in turn, is then defined as not only as the constituent entities, but also as the series of processes through which interactions take place. When applied to human-centered systems, boundaries are at times nebulous, offering little in the way of clearly-defined limits of the system. More often, the human-centered open system is defined not by which entities are included, but by the interactions between them, giving the system a porous boundary quite tolerant of frequent redefinition. Easton (1953, 1957, 1965a, and 1965b) was one of the first to apply systems thinking to the political aspects of human interaction, describing a

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[39] Some systems literature defines open systems as structures, agents, and interactions within a defined environment, while then portraying the system as allowing interaction of system entities with a larger, more encompassing environment. This paper uses *boundary* to delineated the set of entities and interactions that make up the system from the environment within which it exists.

political system as having precise boundaries and a fluid system of decision-making steps held as part of a sequential process.[40] A closed system perspective, not allowing boundary interaction, would exist in isolation, unable to interact with other systems and unable to incorporate change as a prominent feature of its functionality. The very nature of human society, however, is predicated on interactions, localized and global, with other agents, many of whom would be systems members only under the broadest, most expansive system boundary definitions.

Terrorist groups, their adversaries, and the audiences they directly and indirectly affect are agents in a spatially limited milieu. The terrorist-adversary-audience system is a localized, situationally-limited one which is structurally and behaviorally dependent more on the dynamic relationships between agents than on the nature and identity of the agents themselves. Placing terrorism into an open system perspective not only broadens the scope of inquiry beyond the spatial, temporal, or contextual bounds of typical terrorism studies, it also forces the reconsideration of what is and what is not most important to investigate. Emphasis consequently shifts from the actors and their actions to the interactive processes between and among entities.

Crelinsten's (2002) communications model of terrorism is an example of systems thinking applied to the complex series of interactions and actions between entities in a given social system. In this model, society, its laws, its traditions, and its institutions are the system's structures. The terrorists, would-be and potential

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[40] In Easton's (1953, 1957, 1965a, and 1965b) conception, changes in the environment yielded demands on the system (Easton's inputs), leading to competition among system entities, yielding a series of behaviors (the outputs). These behaviors, in turn, restructured the environment, generating a new series of demands and the ultimate perpetuation of the input-process-output cycle.

terrorists, the government and its agents, as well as the general public constitute the set of actors present in the system. The interactions and exchanges between these actors, which Crelinsten describes as social and political dialogues, are the system's processes. It is through these dialogues that the nature of relationships within the communicative structure of society are shaped and reshaped, thus helping determine the likelihood of discontent and grievance transitioning to violent opposition to the state. Other descriptions of terrorism focusing on societal interaction and myth building (Tololyan 2001; Taylor and Horgan 2001 and 2006; and Downing 2001) emphasize the role of interactions in defining and redefining fundamental social structures and relationships. Rather than being restrained to a single dialogue, however, these "conversations" span multiple dialogues, addressing political, social, religious, ethnic, economic, topical, and other aspects of social interaction.

Terrorism, though, is more than "conversation," regardless of how defined. Terrorists engage in violence, or the threat of violence, thus affecting fundamental change in the structure and processes of society. Intended outcomes of violence include wholesale social change; creation or reconfiguration of societal myths; redefinition of political, ethnic, religious, or cultural relationships, or; destruction of existing institutions, processes, and structures. Efforts by terrorists span the gamut of societal dialogues, whether intended to do so or not, such that their efforts can be seen as attempts to restructure the system itself. In a closed system terrorist violence would have no effect other than that visited upon the immediate victims. Extensive media coverage of terrorism, particularly catastrophic acts of violence, argues against an isolationist view of terrorism, demonstrating the reach of violence beyond immediate

spatial boundaries. Even for those not targeted by terrorists, separated by hundreds or thousands of miles from the violent act, terrorist strikes can have lasting debilitating behavioral or psychological effects.

The Real Terrorist Network

A network, as used here, is a collection of agents, or nodes, connected by links. Depending on how the specific system is defined, nodes may be individuals, machines in factory, computers, organizations, population subgroups or any other collection of entities that interact in some manner. The connections between nodes – the links – represent the myriad ways those nodes might interact. Co-workers are linked by employment location and position, family members are linked by kinship, computer workstations may be linked by their connection to the same server or to connected servers. Often described in terms of communication or process pathways, linkages are any ties that in some way join two nodes in an affinity bond. The collection of nodes and their patterns of linkages describe a network and, depending on the distribution and pattern of linkages, dictate not only network structure but to an extent network behavior.

Terrorism describes a process which helps define the growth and evolution of a social network. The societal arena within which it takes place demands the emergence of a scale-free, rather than random, network. Scale-free networks exhibit a power law distribution of linkages, where few nodes enjoy a disproportionate share of links to other nodes. Random networks, on the other hand, feature nodes having a proportionate number of linkages (Barabási and Albert 1999). In a social and political context, nodes – or in this case actors – exhibit preferential attachment by building

and maintaining a selected number of links to others through an individualized decision process. Because it allows for preferential attachment, the system exhibits a wide, and disproportionate, variance in numbers and quality of linkages. Like scale-free networks, social structures tend to lack a clear, over-arching hierarchical structure in that identification of leaders or controllers is contextually defined. Human systems have also been found to exhibit the "Matthew" effect, where nodal attachment distribution and pattern are not simply functions of longevity, but an environment where well-connected nodes attract a disproportionate percentage of new linkages to the detriment of less well-connected nodes.[41]

Emergent scale-free networks are also autopoeitic, or self-organizing and replicating. Structure and control mechanisms – positive and negative feedback processes – are not imposed upon the system. It is the system itself, its structures and organization, which create both regulatory mechanisms and organizational processes necessary for the system to survive and function. Societies create their own norms and traditions, myths and fables, all of which are used to structure broadly-accepted organizing and behavioral systems. As society develops, those norms and traditions are translated into religious dictates, political processes, laws, and social and cultural ethos which establish ranges for what is collectively deemed acceptable and unacceptable. The accumulation of self-organizing practices and processes, the continual change brought about by the actions of constituent components, and the individual and collective learning which help guide and shape future behaviors drive

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[41] Robert Merton coined the term, noting that the essential unfairness of reality had been noted as early as the Bible, where the gospel of Matthew tells us that "For every one that hath shall be given, and he shall have abundance; but from him that hath not shall be taken away even that which he hath." See Watts 2003:108.

the evolutionary growth of the system and makes the network emergent. The accumulation of behavioral impacts – what some refer to as "strong emergence"[42] – not directly associated with system components or structures transform the system in fundamental ways. Society, and politics, arise from the interactions among people, producing a system much more than the simple sum of its components, thus displaying its essential emergent quality.

An emergent network, then, is a system of multiple interacting structures and agents seeking to adapt (Axelrod and Cohen 2000) rather than one being blindly driven by disturbances, inputs, and change. This drive to adapt is universal, with every constituent actor seeking advantage, or fitness, through its acts and decisions. The aggregate of individual node fitness levels describes the system's "fitness landscape." Unlike geographic landscapes, however, the fitness landscape changes continuously. When any actor within the system acts to adapt in an effort to improve its own fitness, the fitness landscape changes in the perspectives of all other actors, typically lowering their fitness levels relative to the landscape and to other competing actors in unpredictable ways.[43] Terrorism is best understood in this context, where terrorists, their adversaries, the general public, and others – all seek to adapt to

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[42] Weak emergence is taken to be the properties arising directly from the system's components. Strong emergence, on the other hand, cannot be associated directly with specific system components, but arises instead from the direct and indirect interaction of agents. See Bedau (1997) and Davis, Laughlin, and Komorita (1976).

[43] In biological systems, this is easier to see. If a species of frog ate a particular species of insect, and the insect species began producing mutations resulting in wings, within a few generations, the insect would gain relative advantage over the frog, raising its own fitness level and lowering that of the frog. Mutant frogs may then appear with now sticky tongues, giving those mutant frogs relative advantage. Before long, the sticky-tongue mutation would become a dominant characteristic of the frog species, since this particular adaptation to environmental changes brought on by the emergence of insect wings now provided new advantage. Over generations, the insect and frog species would produce a series of adaptive mutations, with those conferring advantage, and hence greater fitness, becoming the dominant characteristics of the species. In this simple example, the insect and the frog would be co-evolutionary actors in their particular environment.

environmental, structural, and behavioral changes in an attempt to move themselves, and the system, into a more desirable state.

A Network Model of Terrorism

Terrorism, while appearing endemic in some parts of the world, is not an inherent property of any society. It is, rather, the product of frustrations, grievances, and powerlessness typically initiated by a very small group of individuals who decide, for whatever reason, that meaningful and desirable change could only be produced through violence. The model developed here is a system intended to illustrate and examine broad society-level evolutionary dynamics. The network's nodes are the government, the terrorist group, the public, and the collection of various sub-groups present in the system. These nodes, and the linkages between them, are in a constant state of flux as each actor seeks to improve its own fitness, thus redefining the fitness landscape for all, prompting adaptive reactions from all other actors. Societies thus evolve, although unlike biological evolution, societal evolution can take place on a quite condensed time-scale (see, for example, Huntington 1993; Moore 1993; Barabási 2002; and Diamond 2005). Building on the premise that societies evolve, this model conceptualizes terrorism as a series of internal and external perturbations of the system, triggered by actor efforts to improve or regain fitness, which forces other actors to adapt. Further, these perturbations – terrorism and counterterrorism – are deliberately undertaken by actors with the explicit intent of influencing or changing system structure and directing evolution. The model relies on several conventions of both social network analysis, particularly

the use of visualization as an essential tool for understanding evolutionary development over time.

The network model of terrorism holds that at some specified time, t_0, the system is simple and appears generally stable. There are two principal networks of nodes within the system – the government and the people – even though both interact and commingle at multiple levels. Interaction between the government and the people is typically bidirectional, with each taking inputs from the other and providing inputs to the other. While the network evolves, the evolutionary process may proceed at a leisurely pace, largely driven by cooperative interchange among and between constituent networks and nodes. Large and significant changes to the networks are generally rare, and unpredictable, following something of a power law in the distribution and patterning of linkages. Within the larger component network, the "people," there may exist an unrealized sub-network, a sub-population which will eventually emerge as, or be targeted by terrorists as the terrorists' presumed "constituency." This constituency has not yet been identified, and will not be so recognized until after a terrorist group emerges and defines the boundaries and membership of the constituency. At this time, however, the terrorist constituency remains only a possibility. This basic system is depicted in Figure 1. Arrows illustrate the interaction between the sub-networks and nodes, each of which are taken to represent countless bidirectional relationships. Arrow thickness offers a visual representation of linkage robustness, a measure of the expected relative number, frequency, and strength of its interactions. Nodes, represented by spheres, are sized according to relative fitness.

Figure 1: Network Model of Terrorism: Hypothetical Evolutionary
Progression
Source: Author's construction

At t_0, initial emergence of future terrorist group

At t_1, terrorist group begins to coalesce; violence begins

At t_4, terrorists emerge as co-equal competitor for power and control; mass movement likely; complete or near-complete maturation

At t_2, violence escalates; terrorists begin to develop connection to targeted audience

At t_3, terrorists solidify connection to targeted audience; begin rivaling government for influence

● Terrorist group
● Government
● Population ("the public")
● Presumed constituency

As the system grows, matures, and evolves – each of which it must do unless the society collapses soon after organization – various transaction functions emerge. Each transaction function grows out of the structure and dynamics of the system itself and from the interactions among and between system components. Norms and traditions, for example, are transaction functions which emerge from the patterns of component behaviors over time and, as they emerge, further shape and direct subsequent evolutionary progression of the system. Depending on system specifics – the initial state, in complex systems language – a transaction function may emerge shaped and informed by discontent and grievance held by one or more members of society. Given sufficient time, opportunity, and resources, this particular discontent transaction function may provide the impetus needed for the emergence of a new group of nodes, a sub-population frustrated and aggrieved enough to consider challenging other system agents for influence and power. With sufficient time and inputs, this new sub-network may spawn a nascent terrorist group which seeks to directly challenge the authority and control enjoyed by the government.

As the terrorist group develops its ideology, its goals, and its operational capabilities, its threats of violence and violent attacks provide the necessary stimulus for the emergence of yet another unique system sub-network, the terrorists' presumed constituency. This group, as a system entity, may or may not emerge self-aware, self-defining, or self-identifying. Rather, the terrorists' presumed constituency is generally a societal sub-population defined by the terrorists, who claim in some way to act on behalf of this particular sub-population. In extreme instances, this presumed constituency may be recognized as a unique system component only by the terrorist,

existing only in the terrorists' imagination. In any case, it is in its initial stage largely an artificial construct of the terrorist in that its creation and maintenance do not emerge from the system and its dynamics but from the claims of the terrorist. As such, members of that constituency may accept, reject, or disregard actual or presumed membership.

As the system evolves, the government remains the dominant agent within the system, while the emerging terrorist group is small, poorly resourced, and often operationally timid and amateurish. The terrorists' presumed constituency may be, in fact, a viable system agent, but may just as likely be an imaginary non-entity holding no role in system dynamics. Still in its infancy, the terrorist group's operations tend to be sporadic, unsophisticated, directed against low-risk "soft" targets, and designed primarily to generate awareness and publicity. Organizational survival remains the paramount concern of the terrorist, and recruiting may find its most fruitful opportunities among society's radical students and workers, disaffected minorities, prisoners, the chronically unemployed, the mentally and emotionally unstable, and others who frequently populate society's fringes. Relationships between the government and the public may remain strong and bidirectional.[44] The relationship between the government and the nascent terrorist group, and between the terrorist group and the general population, are also bidirectional, gaining in robustness, but often antagonistic. The kinetic battlefield at this point garners the greatest attention, particularly as attacks become more audacious and destructive. The more critical battle, however, is over the terrorists' presumed constituency, even as this aspect of

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[44] This is not to suggest that these relationships are positive, welcome, or mutually beneficial, only that there is frequent and purposive interaction of a reciprocal nature.

the contest is often unrecognized. As the terrorist group seeks to convince this presumed constituency to recognize itself as such and then to join in challenging the power and control of their shared adversary, whether by propaganda, persuasion, or threat of violence, the government typically takes greater notice and begins to develop and implement programs designed to mitigate or counter the terrorists' appeals.[45]

The interaction between government, terrorist group, and other component populations of the system over time lead to another series of transformational functions affecting the relationship dynamic between various system agents. As the system progresses, the nature of the relationships between agents may shift dramatically. For those terrorist groups that avoid particularly egregious operational, security, recruiting, or propaganda blunders, an expectation of growth, maturity, and increased operational capability is possible. As the terrorist group matures and improves its security awareness, resource acquisition, and operational abilities, it becomes a more direct threat to the government even though staggering disparities remain in the availability of resources and the ability to project deadly force. While the government may enjoy an overwhelming monopoly on power, the terrorist group's small size, clandestine nature, and mobility afford it the opportunity to avoid devastating government counter-actions. Able to act with relative freedom, the

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[45] It should be noted that efforts to win over this sub-population, whether undertaken by the terrorist group or the government, can rest on positive inducements, incentives, and rewards, on negative inducements and punishment, or both. A third alternative, most effectively advocated by Carlos Marighella (1970) is for the challenger to prod its adversary into an escalating series of reactions and retaliations, thus goading the government into revealing its inherent undemocratic and tyrannical character. As the people come to understand government's "true nature," public support is expected to shift to the challengers, which by then strive to portray themselves as the defenders of the people. Done successfully, Marighella asserts, and the rebels push government into creating the necessary conditions for turning the people against it.

terrorist group at this point commands headlines and attention through its violence, its unpredictability, and its apparent operational impunity. The terrorist group, relying on fear and surprise, becomes a recognized threat not only to its government adversary but to the system's stability as well. Terrorist operations, as insignificant on a larger scale as they may be, nevertheless produce significant shock that becomes, singularly or in series, a severe perturbation to the system. By this stage, too, a true terrorist constituency which recognizes itself as such may begin to emerge, giving terrorist and government alike a more clearly defined battlespace. The terrorists' ability to attract a supportive audience, and maturing operational capability, may afford the terrorist the resources needed for positive evolutionary progression. All relationships between system agents remain, although some like those between terrorist and government, between terrorist and terrorist constituency, and between government and terrorist constituency, could take on a significantly more robust quality, reflecting the beginnings of a shift in the power and influence relationships within the system.

The Evolutionary Curve

The development of the terrorists' challenge to government for influence can be represented in a hypothetical model as an S-curve, recognizing slow initial growth, followed by more rapid expansion and maturation, then a slowing of development as the organization begins to reach full maturity and prepares to assume a co-equal status with government (Figure 2). As the nascent terrorist group develops sufficient wherewithal to begin violent attacks against the government or other designated target as informed by the group's particular ideological orientation, violent anti-government action is undertaken, ensuring the group it will soon come to the attention

of authorities. Because the group is now beginning to represent a direct threat to social and political order, it faces more challenging security concerns and greater pressures to invest more attention and resources into group survival. At about this point in the group's evolution, the realities of operating violently against the state turn group attention more sharply toward the need to generate support from among the local population. This begins the group's violent infancy.

At this stage, the terrorist group has few resources with which to effectively survive without some form of assistance. Violence against the state requires the

Figure 2:   Hypothetical Evolutionary Curve
Source: Author's construction
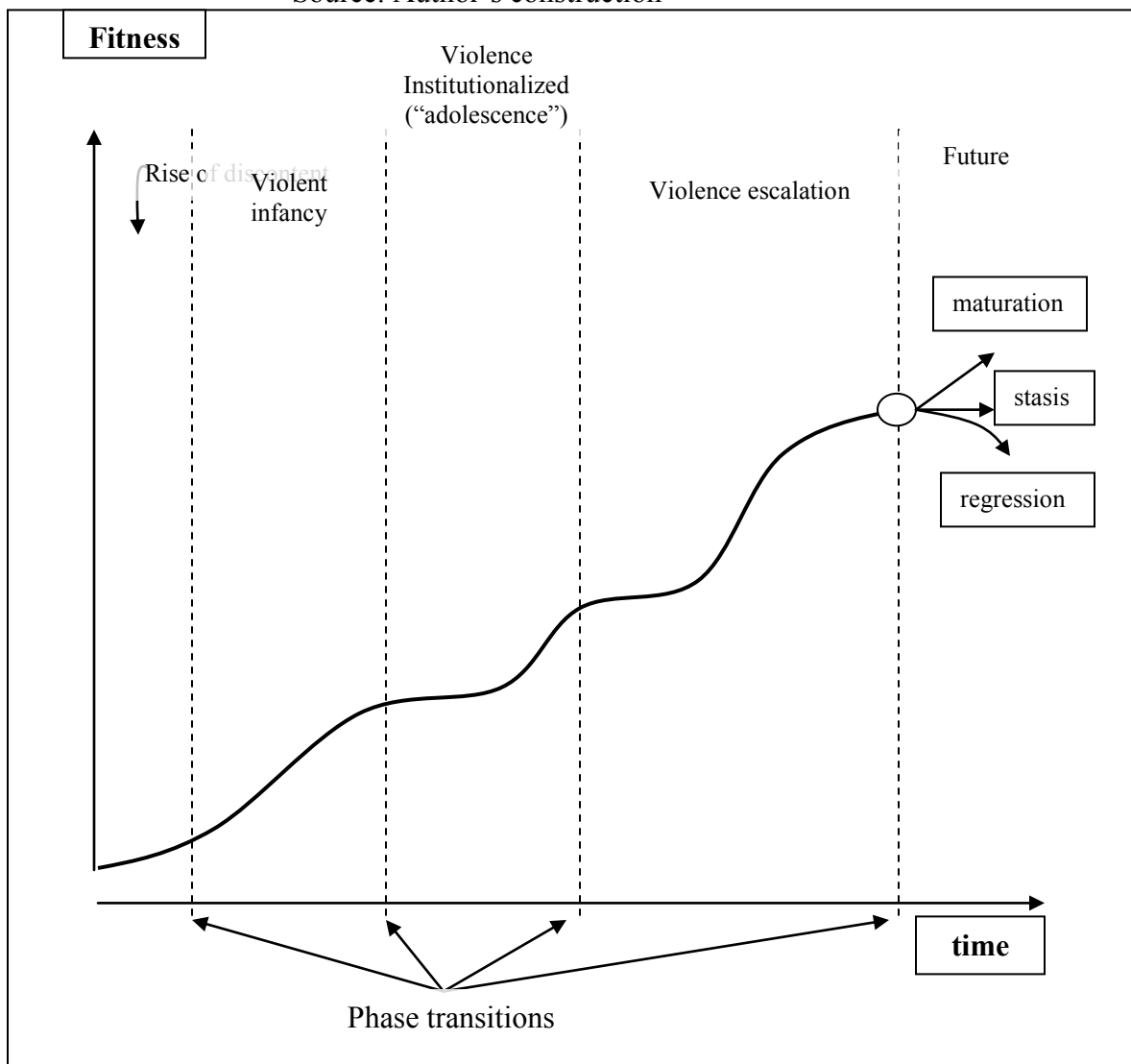
expenditure of resources, with more noteworthy attacks or sustained campaigns of violence requiring escalating expenditures. To counteract the overwhelming disparity in resources between itself and its opponents, the terrorist group will need to begin building a base of support as a necessary counterweight to their government opponents. Here, the terrorist will need to expend more effort on identifying a specific constituency it wishes to represent, crafting a "message" having relevance to a given constituency and likely to garner support from that constituency, and finding the most effective means of communicating that message to the selected constituency. Having a message, even if ideologically grounded, is not enough, however, to win over a constituency whose members probably afford greater weight to potential risks associated with support than to expected benefits of support. The terrorists will, consequently, need to ensure relevance of their message to the intended constituency, and will need to ensure that its actions are generally consistent with, and reinforcing of, their claimed rationale for violence.

As the group develops and grows, its violence becomes more regular, more professional, and more effective. Its operational capability increases to the point that less attention can be focused on mere survival, and more attention can be paid toward the acts it deems necessary for achieving its stated goals. Recruiting should become easier, as knowledge of the group and its goals spread, attracting individuals who agree with the group's aims or who have convinced themselves that group membership will result in future benefit. At this point, depicted here as the second

principal phase transition, violence becomes more institutionalized. Violence, which they alone author, may attain a prominent place in the group's thinking, leading it to see their actions alone as the vehicle for societal salvation. The group's perspective likely begins to turn inward, and its members begin to internalize the group's claims of both ascendency and leadership in bringing about desired change. The group and its members see themselves as possessing the knowledge, the vision, the goal, and the determination to affect meaningful and lasting change.

Further development of the group, particularly in the face of a decline in governmental effectiveness in counter-terrorist operations, would likely lead to additional violence escalation. For the terrorists, growing membership, increases in available resources, success in recruiting, and suggestions of wider and deeper public support prompt even more violence against the state. The terrorist group may at this point believe it senses both a weakening government and a growth in popular approval, and may begin to think more about a final stage of conflict. From the government's perspective, the threat posed by the terrorist group grows considerably, prompting it to escalate its own counter-terrorist efforts in an attempt to more effectively address the challenge it faces. Governments which believe they are losing public support may also, at this time, turn against that segment of society it sees as disloyal or supportive of their challengers, bringing the mechanisms of state power to bear against its own people. This third phase transition marks the transition to a new phase of the conflict, a concerted period of violence escalation.

The effectiveness of the terrorist group in maintaining positive growth[46] determines, in part, the degree to which terrorist groups in the escalatory phase are able to progress toward full maturation. Sufficient growth of terrorist group membership, effectiveness, popular support, and efficacy can lead towards a fourth, and critical, phase transition in which the group's ultimate future is determined. At this point, the government stills enjoys overwhelming superiority in numbers, in power, and in the ability to project deadly force. It may or may not enjoy widespread public support, but can be expected to maintain the support of a significant portion of the population. The terrorist group can be assumed to recognize by this point, and perhaps much earlier, that the key to undermining and effectively countering the government's overwhelming superiority is to develop and maintain a sufficiently large – and active – supporting constituency. Because the government may enjoy majority support, the terrorist group's potential for evolutionary progression rests on its ability to maintain and grow a supportive audience into an actively participating constituency which can, properly constituted, begin to swing the conflict momentum towards the terrorist group.

At the fourth phase transition, or criticality, the terrorist group has, then, three basic evolutionary trajectories which it might follow. First, and typical of many situations, the terrorist group may remain on the cusp of maturation, failing to take advantage of opportunities while avoiding the most self-damaging and self–destructive actions. Here the system settles into a form of stasis where the strengths and robustness of interactions between the targeted constituency and both the terrorist

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[46] Positive growth, in this context, is the ability to attract more recruits than the loss of members brought about by arrests, defections, incapacitation, willing or unwilling exile, or death.

and the government remain more or less equal, leaving neither government nor terrorist with the capacity or the will to achieve a decisive victory. Stasis is not stability, however, leaving the system and its components to lurch from crisis to crisis, disturbance to disturbance, without achieving resolution.

A second possible developmental direction is that the terrorist group can commit an unpardonable act, author a series of less catastrophic but nevertheless egregious acts, or fall prey to either their own ineptitude or to a significantly improved government counterterrorist capability. In this circumstance, the terrorist group finds itself unable to retain its supporters, for whatever reason, and falls into a destructively disadvantageous position with respect to its adversaries. Here, the strength and robustness of system components and relationships with the targeted constituency shift dramatically in the government's favor. As a result, the terrorist group sees a significant erosion, if not outright destruction, of its ability to access resources necessary for maintenance of operational and growth capabilities. The terrorist group in this situation consequently devolves, perhaps to the point at which it withers away, a victim of its own limitations and poor decision-making.[47]

A third possible evolutionary path finds the terrorist group making the transition from fringe sub-state agent to mass movement, becoming a more equal claimant to power and influence, with greatly improved odds of affecting both desired

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[47] Much as the German Red Army Faction (RAF) did in the 1990's, when it found itself no longer able to effectively recruit from a shrinking population of radical students and workers and no longer able to acquire other resources needed for maintaining operational viability and political relevance. The RAF, however, failed to understand that its devolution was largely a product of both circumstance and internal failings, choosing instead to lay blame for its failure to advance the revolutionary cause squarely on the shoulders of the German proletariat and students by claiming both populations were too ignorant and too stupid to understand revolutionary praxis and their critical and unique role in the inevitable progression towards communism. See the Red Army Faction's (1998) statement on ending the armed struggle.

socio-political change and the defeat of their adversaries. Here, the terrorist group finds a way to connect with its presumed constituency well enough to enable and enhance its evolutionary potential. Building on that connection, the terrorist group effectively leverages the moral and political support found among that constituency to recruit, acquire funds and supplies, gather information about government activities, and find safe haven. The linkages between the terrorist group and the presumed constituency become stronger and more robust and, depending on circumstance, may finally become truly bidirectional. By the same token, the linkages between government and the terrorist's constituency weaken considerably and may become largely unidirectional as the government continues to try leveraging the supportive public away from the terrorist. In this model, such circumstances auger well for the terrorist group to begin leveling a claim for status and legitimacy, and finds avenues opening which would allow it to begin the transition, in whole or in part, towards an overt mass movement existence.

The competition between terrorist group, government, and other actors in the system inevitably changes the fitness landscape, the operational milieu of the conflict, in violent, dramatic, and unpredictable ways. In the hyper-competitive environment that characterizes an active terrorist presence, multiple populations of agents and localized networks compete, driving each to adapt to the actions of others and to the environmental and contextual changes all actions bring about. This mutual, reinforcing, and responsive series of adaptations is what Axelrod and Cohen (2000) refer to as the co-evolutionary process of the system.

While much focus is given to the direct kinetic competition between terrorist and government, the more important conflict is found elsewhere. Sub-network membership is fluid, with individuals establishing connections to others on the basis of some individually defined set of criteria. This practice of deliberative preferential attachment, in turn, is defined in societal settings by context. New actors in the system face a daunting task in determining when, where, and how to establish connections, since the search for viable and compatible linkage possibilities can be resource intensive. To compensate for the high cost and lack of resources initially available, new actors in a system will search instead for affinity groups – sub-networks defined by shared interest or common characteristic – to link to first (H. White 2008) before seeking subordinate individual connections. These self-defined affinities establish "context," a foundation upon which subsequent social linkages are built. For the terrorist seeking to build and maintain a supportive audience from within the larger population, defining a context of shared grievance, shared perspective, and shared hopes for the future is critically important. Here is where the real conflict is found, in the war of ideas, ideologies, interpretations, and belief used to garner support for oneself and deny it to competitors. Often subsumed under the notion of "winning hearts and minds," defining and leveraging context are the underlying purposes for both terrorist messages and terrorist violence.

In societal settings, however, sub-populations tend towards mutual exclusivity in the provision of sympathy and support. Sympathizing with the terrorist or his cause generally precludes sympathizing with the government, and vice versa. Supporting terrorists in words and deeds is most often risky activity, raising the possibility of

sever consequence at the hands of the state. Because terrorist and government offer diametrically opposed choices for the targeted audience, success in defining context favorably translates into stronger linkages between terrorist or government, on the one hand, and that segment of the population from which support and sympathy is sought, on the other. The stronger these linkages can be made, the greater the relational resilience in the bounds between those actors resulting in gains in relative fitness levels. Here, in a network model of terrorism, the contest between terrorist and his opponents is one over context, where each competitor seeks greater fitness and relative advantage by using violence, the threat of violence, or messages to manipulate and guide the definition and development of context in ways expected to be advantageous.

Shifting Perceptions

Terrorism does not take place in isolation, and affects many more people than the immediate audience(s) and victim(s). This has long been acknowledged by terrorism scholars, but only when addressing the impact of terrorist attacks, either singularly or in series. But the non-violent acts – everything from the rhetorical war waged against their opponents in the form of propaganda and statements, communiqués and claims of credit, petitions and placards, provision of services not provided by government or otherwise accessible to cooperation with other criminal enterprises for any reason – also have far-reaching and sustained effects on the system and its components. Terrorist groups do not act in isolation any more than their government opponents do, for each acts within an ever-evolving adaptable and adaptive network of networks where strength and status are conditional upon those of

other system and network agents, upon the structures of the networks and subnetworks and the systems they make up, and upon the environment in which all those components exist. Understanding terrorism in this context will allow continued growth and evolution of the understanding of terrorist itself, helping propel the study of terrorism forward.

To reach that goal, however, demands reductionist and zero-sum perspectives give way to systems and network thinking. It also demands, at these initial stages, evidence that there is potential for serious inquiry and insight to be gained by such a radical approach to the study of terrorism. This work endeavors to begin just such an exploration by suggesting an evolutionary-based, system- and network-oriented approach holds both promise and value for terrorist studies. This paper works towards that end by proposing a new measure of linkage resilience based on specific violent and non-violent activities of terrorists as they seek to define and leverage context. This expected affinity measure is intended to offer an opportunity to evaluate and predict the most likely evolutionary trajectory – the expected efficacy and success of defining and leveraging context – of terrorist groups.

Chapter 4: Operationalizing Models

The previous chapter built two hypothesized models outlining a network-centered systems perspective of terrorism. This chapter explains the intent of the two models, outlines the way variables in the models are operationalized, explains how each model is examined, and explains how conclusions are reached.

Social network analysis (SNA) of terrorist groups offers little by which one can effectively judge the strength of relationships between the terrorist group and its presumed constituency. SNA is relational, yet focuses its attention on the totality of network linkages and structures, limiting examinations to description of network structure and development. The network itself, however it develops, and the resulting topologies encapsulate the principle areas of interest in SNA analyses. As a result, most network analyses are conducted at the system level of analysis, offering little insight into the nature, needs, or activities of individual nodes or into the nature of the linkages between specific nodes.

SNA typically focuses attention on sub-systems or sub-networks within the context of larger networks and systems. Terrorist groups, for example, when subject to SNA analysis, are addressed as largely self-contained networks rather than as active entities within a larger political or social context. Typical SNA measurements – path length, centrality, density, betweenness, and the existence or absence of clusters – limit the scale of inquiry to the immediate sub-network. A disproportionate level of attention, therefore, is devoted in these studies to description of the network, assessment of the centrality and connectedness of various component entities, and the identification of leading or controlling component entities. Opportunities for

assessing the evolutionary potential of terrorist groups, however, are not possible given the limited scope of these studies since such assessments demand examination of network topology and network interactions within the context of the larger supra-network structure. Where typical SNA studies consider the potential for evolutionary growth of a node in terms of its probability of, and opportunities to, link to other nodes in the network, they do not assess growth potential in terms of the strength or robustness of linkages between nodes.

The level of analysis in this paper consequently shifts to the mid-range, between the larger network and smaller, isolated sub-network of interest, to the specific characteristics of a linkage between two critical sub-networks. The social and political environment in which the struggle between terrorist group and its adversaries takes place constitutes the larger, encompassing network. Contained within this network are a variety of sub-networks, most of which overlap with a variety of other sub-networks. At this level, the terrorist group constitutes a specific sub-network, as does the government, the terrorist's presumed constituency, the media, students, workers and businesses, sports leagues, cities and other local governments, churches and similar religious groupings, and countless number of other associational groups. Where typical SNA analyses study specific sub-networks, the present study addresses the linkage between selected sub-networks, specifically the terrorist group and its presumed constituency.

Terrorist group survival, particularly in the face of effective and determined government opposition, rests in large part on the terrorist group's ability to build a reservoir of support from which it can replenish or increase supplies, funds,

information, and, most importantly, recruits. While logistical assistance and material supplies can, and often are, acquired either from outside sources or from criminal acquisition at the local level, insuring a steady stream of recruits requires some degree of local sympathy and support. External recruiting may boost organizational status and effectiveness over the short term, but is inadequate for sustaining operations over the long term. Terrorist groups that rely on outsiders to fill their ranks quickly come to be seen as mercenary forces seeking to import a cause or exploit a local weakness. The result is often a failure to generate a sustainable level of local support and sympathy necessary for forging lasting local ties and standing.

In order to leverage opportunities for success in operations and develop into a potential victor, a terrorist group must 1) find or create common cause with an identifiable constituency and 2) locate that constituency among the population in their area of operations.[48] Identifying those groups best positioned to evolve into serious threats to power thus rests on an assessment of the group's ability to gain and maintain a supportive local audience. This paper explores the potential for making such an examination by creating a measure of linkage strength, or robustness, in a network that, at present, does not exist, and testing the validity and efficacy of that measure in several carefully selected case studies. This project's focus, as a result, is principally the development and initial testing of a new measure through which

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[48] Cross-national or international terrorist groups, such as al-Qaeda today or al-Fatah in the 1970s and 1980s, sometimes operated in countries far removed from the geographic area in which their grievances rested and far removed from their claimed constituency. In these instances, the group's primary area of operations were in the geographic area most closely associated with their presumed constituency and grievance or the group developed and maintained a broad spectrum of support in that area.

relational strength can be measured in studies of terrorist evolutionary potential rather than on the subject terrorist groups or their struggles and operations.

Evolutionary biology offers a useful starting point, since that field has addressed similar questions in the continued study of evolution. In recent years, Stuart Kauffman (1995) has challenged the notion first outlined by Darwin that evolutionary processes dictate a graduated adaptation-mutation dynamic leading to incremental change in organisms in order to meet environmental challenges. In doing so, Kauffman developed a fitness model, otherwise known as the NK-model, which describes a potentially explosive adaptation response among living organisms as much a product of genetics as environmental stressors. Kauffman's NK-model posits evolutionary change as stemming from the complex interaction of genes and alleles, the outcome of which determines the organism's relative fitness[49] by which its survival as a species is determined. Fitter species meet existing and developing environmental challenges while less fit species do not. Kauffman's model envisions a "fitness landscape" of peaks and valleys, with relative height equating to level of fitness, to describe an organism's ability to survive through multiple generations.

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[49] In Kauffman's NK-model, genes are assigned one of two values, + if "on" and – if "off." Whether a gene is expressed, or turned on, depends on the specific affect other genes and alleles have on it. In a simple three gene example, the total number of possible gene combinations equals 2^N, where N represents the total number of genes. An organism with three genes would thus have 8 possible expression combinations, ranging from +++ to - - - . For each combination, a fitness coefficient, W, can be calculated, which Kauffman designates W_1, W_2, and W_3, representing the specific impact of genes on each other. The organism's overall fitness, then, is a combination of specific gene pair fitnesses, $W = \frac{1}{N} \sum_{i=1}^{N} Wi$. In evolutionary biology, each of the possible outcomes of gene expression can carry a calculated overall fitness, illustrative of the possibility that species evolution can result in branching, with different sub-species evolving in different directions. Adapting the NK-model to social and political groups, however, offers less of an opportunity to consider variances in sub-group evolution. Given the greater inflexibility, the adaptation of the NK-model used here posits only one possible state for any series of potential "gene" interactions. See Kauffman (1995: 170-187).

Nature, however, appears to dictate constant striving for greater fitness, hence lasting survival, such that living things never regress toward less fit states.

Social interactions, including terrorism, however, offer the possibility that one or more actor can regress to a "less fit" state. Stressors leading to the crumbling of societies, for example, offer clear examples of instances in which a social arrangement can descend to a less fit level as it seeks to address internal and external challenges. Neither failure nor success in adaptation appears guaranteed, yet the NK-model does not allow for any possibilities other than success or stabilization. As a result, Kauffman's NK-model is used as an illustrative model rather than as a template for assessment. Where the NK-model offers an opportunity to assess multiple paths of species evolution, the fitness model developed here considers organizational evolution in terms of potential states of operational status, or instantaneous robustness, such that fitness can be calculated at selected points across a given time span, and those fitness levels compared over time.

Defining Expected Link Affinity

Whereas evolutionary biologists face a complex genetic matrix even for the simplest organisms, translating fitness to a social setting can be quite simple, albeit with a different set of entanglements. Living things carry hundreds, if not thousands, of genes, many of which having roles that are poorly understood, if understood at all. The sheer number of genes in even the simplest species offers a significant hurdle to understanding evolutionary change. In a social setting, a simpler model is possible, offering both a more straightforward evolutionary path and a much simpler set of factors analogous to genes with which to work. In considering a terrorist group's

efforts to evolve and increase operational effectiveness and survivability over time, it improves its relative fitness with each new connection to a supportive audience. The criticality of the terrorist – audience – constituency linkage, then, is seen as the key to understanding the opportunities a terrorist group has in improving fitness, maintaining a steady state fitness level, or regressing to a less fit status.

Grunig's (1976, 1982, 1984, and 1997) theories of a situational theory of publics offers a reasonable starting point for the development of a link robustness measure. According to Grunig, four factors are critical for an information or marketing campaign to be effective. First, there must be a degree of problem recognition, either already existent or created, producing individual perceptions of a "need for information" such that the individual acknowledges a given problem exists. Grunig (1982: 167) holds that problem recognition is critical since "a person who perceives a situation as problematic needs information to solve the problem." Terrorists seeking support have the same critical need, requiring a constituency to understand and agree that a given situation or status is unacceptable or undesirable. Recruiting potential members or supporters demands linkage to some dissatisfaction or grievance, particularly given the expected costs that would be associated with anti-government activities. Where a problem is not widely acknowledged, the terrorist must create the impression that a problem exists and find a way to convey effectively that understanding to a targeted audience. Where some degree of problem recognition already exists, the terrorist can best capitalize on that perception by highlighting and reinforcing that awareness. Effective exploitation of problem recognition, whether created or manipulated, could be achieved through effective articulation of

grievances, repetition of grievance claims, and establishing and maintaining credibility, particularly where the creation of a grievance is involved.

Second, the degree to which a person perceives a personal association with a given grievance, what Grunig calls level of involvement, helps determine the degree to which a communications or marketing campaign is effective. A personal stake in an issue results in motivation to acquire information, since the individual needs information in order to plan appropriate behavior (Grunig 1982: 167). For the terrorist, creating and maintaining problem recognition is inadequate if that level of problem recognition is undermined by a weak or missing level of involvement. The most effective means by which apathy can be overcome is through the creation of such a personal stake in the outcome of an issue, by making the grievance personal, by personification of the issue in order to tie an issue to an individual's goals, aspirations, or sense of justice. The terrorist's effort to gain support must have a personal impact on the intended audience, with communications on a level that resonates with that presumed constituency. By personalizing the grievance, and the effort to address the grievance, the terrorist must create and foster some sense of community or shared stake in the outcome of the struggle.

Recognizing a problem and understanding one has a personal stake in its address and resolution, however, are not enough to spur most people into accepting the considerable risk associated with supporting a terrorist group. Grunig (1982: 167) calls a necessary third factor constraint recognition, the level to which an individual believes he or she can have an impact on the outcome. Futility is recognized as a significant barrier to action, so the terrorist seeking to gain support would need to

overcome the risk aversion that often accompanies calls to violent struggle. To succeed, the terrorist would need to convince his presumed constituents that the benefits and rewards of acting outweigh the risks associated with acting. Alternatively, the terrorist could choose to convey the message that the costs of inaction, or of acting and failing, far outweigh the costs of joining the struggle. Depending on prevailing societal perspectives and norms, such a message could also be couched in the language of religion, asserting that action is consistent with the dictates and expectations of a deity or is otherwise consistent with religious duties. Similar appeals to ethnic or cultural survival or protection could also serve to create the necessary levels for overcoming constraints.

Finally, Grunig posits a referent criterion, a sense of "whether the person thinks he has a solution for the issue," noting that an individual will seek out information, and process it more often, when no referent criterion exists (Grunig, 1982: 167-168). For Grunig, individuals with a referent criterion seek less information because they already have an understanding of what needs to be done. The terrorist, however, seeks to create and maintain a belief that only the terrorists' way, however difficult or distasteful, is the appropriate way of addressing grievances. A constituency that already has a solution offers barriers to this effort by holding competing notions about appropriate solutions. Should such alternatives exist, the terrorist would likely seek to characterize them as flawed, unworkable, or ineffective. As such, the absence of a referent criterion, or the destruction of a preexisting referent criterion, serves the terrorists' purpose by affording him the opportunity to establish

and maintain a perspective that acknowledges only one avenue for grievance resolution.

Terrorists communicate with their audiences, including their presumed constituents, both by violence and through publicly released statements and claims of credit for violent acts. The overt communications of the terrorist constitute a rhetorical component of the communication effort, serving to explain and justify the terrorists' positions and actions. Through these messages, the terrorist seeks to provide a rationale for his actions, explaining why something was undertaken, issuing demands, conveying threats for failure to accede to demands, offering or dictating proposed solutions to stated problems, and appealing for assistance and support. In creating and dissemination their statements, claims, and communiqués, the terrorist group seeks to construct and convey a particular worldview, often through a combination of disparaging and hostile characterizations of "the enemy" and vague but attractive visions of what the future could hold.

These messages are reinforced through the symbolic message inherent in the violent acts undertaken by the group. Weapon selection, target selection, type of attack, and even timing of an attack convey meaning to the terrorists' audiences. More often than not, the interpretation of the violent act reflects more the perspective of the observer than it does the intent of the terrorist. While some discrepancies are intentional, serving as part of the "propaganda war" between terrorist and government, most likely stem from a more innocent difference in perspective and interpretive framework associated with the differences between aggressor and perceived victim.

Bringing the insights of Kauffman and Grunig together in the context of terrorism offers a novel approach to assessing the likelihood of terrorist group evolution towards status as a serious contender for power or mass movement. Whereas Kauffman's NK-model, applied to evolutionary biology offers a "fitness landscape" of varying topology, adaptation to a societal setting simplifies the landscape. Gone are the multitude of peaks and valleys representing a variety of local maxima and minima of fitness potential, replaced by a fitness terrain dominated by a single system-defining optimum evolutionary outcome.[50]

Fitness, in the assessment of terrorist groups, must address the interaction of each factor, in both rhetorical and symbolic contexts, as well as the impact of any existing referent criterion. To capture that interaction, fitness, or expected affinity, A, is defined as

$$A = (1 + SY)\,(\mu)$$

where SY is a measure of the symbolic orientation of the terrorists' actions and μ is a measure of the rhetorical orientation of the group's communications. Each of the terms, in turn, contain multiple components intended to describe the nature of both rhetorical and symbolic communicative content directed at the group's anticipated and presumed constituencies. Grunig holds that a referent criterion acts as a damper

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[50] Kauffman's fitness landscape of peaks and valleys represents the multitude of possibilities species evolution can taken. While such a landscape's topology changes over time, as environmental conditions re-define advantageous and disadvantageous traits and abilities, the societal fitness landscape exhibits a much lower propensity for change. In large part, this lower propensity for change is due to the relative stability offered a social grouping by virtue of its accepted and established norms, values, and belief systems. Significant changes to the societal landscape are not generally the product of internal tensions and disturbances, which terrorism would represent, but are rather the product of external challenges coupled with poor reactions and responses (see Diamond 2005). Wars, natural disasters, and economic collapse exacerbated by increasingly interrelated global dependencies are much more likely to result in significant societal fitness changes than are more localized perturbations and pressures.

on problem recognition, level of involvement, and constraint recognition. Where a referent criterion is present, individuals are less likely to seek out information, and act on it, since they are more prone to believe they know what needs to be done. As a result, a referent criterion determines the degree to which the other three factors can and will come into play. Grunig's work, however, focuses on interactions where each actor is relatively free to choose between available options, to act or not act, to pay attention or ignore, the delivered message. In an environment of terrorist activity, where fear and uncertainty inform perceptions, choices, and perceptions of choices, the referent criterion is effectively removed, freeing individuals to perceive events around them in an often-personal way and to make choices about how to react to those events.

Problem recognition, or lack thereof, is expected to affect both the level of involvement and the impact of constraint recognition. If an individual were not to recognize a problem exists, there would be little call for action and, consequently, no expectation of involvement. Similarly, a lack of problem recognition precludes consideration of constraints, since there are no expectations of sanction or negative reward where participatory behavior is not undertaken.

Level of involvement is expected to escalate rapidly, particularly given the extra-legal nature of supporting or participating in terrorist activities. As one gets more deeply involved in such activities, the threat of sanction and punishment rise. Similarly, involvement in terrorist group activities would be expected to escalate gradually over time, with initial forays in support of terrorists relatively small, offering no overt illegality, and only incrementally moving toward a more easily

distinguishable break from prevailing behavioral rules and expectations. Escalation of behaviors could result either from action followed by lack of sanction, or from perceived government over-reaction. The former would reinforce a notion that one might continue to act and act more brazenly with impunity, while the latter could push the non-committed to openly side with the group in order to "punish" the government for its excessive behaviors (see, for example, Bell 1998 and 2000). From either of these points, escalation in level of involvement could be expected to rise rapidly,[51] making the cumulative impact of level of involvement multiplicative rather than additive.

Constraint recognition, on the other hand, is expected to be cumulatively additive, given the notion that the greater perceived impact of constraint recognition is likely to be at the onset of activity, rather than after the individual has become habituated to a pro-terrorist behavioral pattern (see, for example, Kahneman and Tversky 1984; Hoffer 1951). The more "comfortable" one gets in acting, overtly or covertly, on behalf of a terrorist, the less of an impact on perceptions and fears the threat of sanction will carry, leaving later considerations of constraints to continue dampening an individual's willingness to act but in increasing smaller measures.

Calculating the Message Factors

Assessing fitness, or expected affinity, requires a means to address both the rhetorical and symbolic contexts of terrorists' communication with their audiences,

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[51] Terrorists have long recognized the value of commitment to the cause as a bar to societal re-integration. Recruits have often been tested to establish the status as bona fide recruits, rather than informer or agent of the government, by being directed to undertake clearly illegal acts that ordinarily carry severe legal sanction. Recruits are ordered, for example, to murder, since the terrorist group understands that crime is too excessive to allow those responsible to return to the government side without penalty.

especially with that particular audience the group sees as its primary constituency. In some respects, the rhetorical dimension has greater impact on problem recognition, level of involvement, and constraint recognition given its ability to accurately and concisely convey meaning specifics. The symbolic content of a message, on the other hand, is often ambiguous and subject to sometimes widely divergent interpretations. Regardless of how careful the terrorist is in operational planning, the accurate conveyance of a symbolic message is always tenuous, depending as it does on the interpretive abilities of an audience. Given these differences in expectation of accuracy in interpretation, problem recognition is defined as a combination of the number of messages delivered in a given month and the ratio of problem acknowledgement or definition references to problem denial referents. The more complex the ideological grounding of the terrorist group, the more likely that group's goals, objectives, and meaning will be difficult to convey to an external audience. Text messages offer more of an opportunity to contribute to accurate interpretations than do the hidden and ambiguous sub-texts inherent in operational decision-making. Similarly, groups seeking to create grievances where recognition of problems does not already exist have greater opportunity to avoid interpretive inaccuracy by explaining themselves and their actions in textual forms than with acts of violence.

Problem Recognition

Rhetorical problem recognition, ρ_R, addresses the intent of the terrorist to convey to a specified audience the recognition or belief that there is a problem or issue that is not only a common concern, but needs to be addressed. Conveying recognition or identification of a particular issue requires the terrorist's

communications acknowledge the problem while also persuading that audience to accept the interpretation of the situation presented by the terrorist. Not only must the terrorist convince the audience to see the situation in substantially similar ways to the perception of the terrorist, it must also work to affix blame to some external entity, preferably the terrorists' adversary. To be effective, that message needs to establish and maintain consistency over time in order to avoid confusing issues and risking a cognitive and perceptual split in the audience the terrorist deems its constituency. Furthermore, the message needs to be relatively simple, since too complex a discussion, too esoteric or too theoretical a discussion may alienate some or all of the audience the group targeted. Simple messages are easier to understand, boosting the probability that the message will be understood and accepted by that audience. The message needs to have cultural, ethnic, contextual, or communal relevance, giving the issue or problem discussed greater resonance and salience with the targeted audience. The terrorist can also increase chances of achieving a connection with the targeted audience by emphasizing a communal or shared nature of the issue, establishing in turn a common cause with the targeted audience and establishing a sense of partnership and shared hardship.

The degree to which the terrorists' message achieves these goals can be assessed through content analysis of the messages the terrorist creates and communicates to the targeted audience. Rhetorical problem recognition is calculated using a content dictionary of 175 words incorporating issues of centrality and shared hardship.[52] Centrality, in this context, refers to words used to emphasize core values,

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[52] To create the dictionary, appropriate categories for the General Inquirer and the Lasswell Value Dictionary were combined, forming an initial set of categories designed to reflect the concepts

shared belief, and legitimacy. Hardship words indicate, reinforce, or help create

awareness in the existence or persistence of some undesirable activity or condition,

particularly when that situation can be blamed on an outside or authoritative

adversary. Words in the dictionary that address centrality and hardship are referred to

here as "issue positives." Linguistically simple messages, borrowing Rudolph

Flesch's (1948, 1951) notion of the affect of convoluted messages, are expected to

have a greater impact on the targeted audience and its members since a simpler

logical argument construction is expected to be easily understood by a greater number

of message recipients. Words associated with complex logical constructions are

referred to here as "issue negatives." Both issue positives and issue negatives are

further expected to increase in effect the longer and more frequently each appears in a

message presented to the intended audience, therefore the frequency of relevant

phrasing repetition contributes significantly to calculation of rhetorical problem

recognition:

$$\rho_R = c \left[\ln \frac{(1+vi^+)}{(1+vi^-)} \right]$$

where c is a standardized score indicating the semantic complexity of the message,

vi^+ is the calculated frequency of issue positives in those messages, and vi^- is the

calculated frequency of issue negatives in those messages. There is always the

possibility, however, that a terrorist group's message might gravitate to one or the

other extreme, resulting in a wholly positive or negative message. In such a case, the

encapsulated in Grunig's situational theory of publics. This initial category set as then reviewed word-by-word to ensure both appropriateness of included words and completeness of each created category. Categories were then selectively augmented by context-specific words and phrases common to discourse on and in periods of political and social violence. In constructing the categories in this manner, the intent was to create a set reflective of Grunig's concepts that is general enough to hold applicability across a range of temporal, cultural, and political contexts.

ratio between frequency of message positives to message negatives could be either zero, 0, or undefined mathematically. To avoid that possibility, the calculation of issue positives and issue negatives incorporate an arbitrary base of one, 1, for each, generating the expressed $(1+vi^{+}) / (1+vi^{-})$ ratio. The natural logarithm of that ratio is then taken in order to standardize measures across time and operational context.

Level of Involvement

Level of involvement calculations follow a similar pattern, with the measure seeking to capture the extent to which terrorists' messages articulate a recognition of the need for, or desirability of, individual involvement in efforts to resolve the previously identified problems. Since level of involvement engenders either the call to action or the resulting action itself, level of involvement is moot for the terrorists' constituency until they choose to act in conjunction with or on behalf of the terrorist group. For that reason, there is no separate symbolic component for level of involvement. Level of involvement is thus defined as the number of messages delivered in a given month and the degree to which those messages emphasize or highlight the need to act.

Calculating level of involvement in terrorists' messages requires determination of the extent to which those messages encourage, prompt, or rationalize the choice to act in some way supportive of the terrorist or his aims. Consequently, rhetorical level of involvement addresses the desirability of acting on a personal level, a sense of kinship or shared condition, and a sense of obligation. Messages scoring high on rhetorical level of involvement would be expected to combine an appeal to a sense of justice and either inspirational encouragement or incitement toward hatred

directed at the claimed adversary or problem source. The content dictionary

constructed to allow measurement of rhetorical level of involvement contains 728

words offering a mixture of positive and negative appeals, the "action positives,"

tempered by ambivalence, complexity, and expressions of satisfaction, the "action

negatives." Both action positives and action negatives are expected to have

increasing effects the more often and the more frequently each is expressed, making

the number of messages delivered another important factor. Level of involvement is

thus calculated as:

$$\lambda_r = n_m \left[\ln \frac{(1+va^+)}{(1+va^-)} \right]$$

where n_m is the number of messages provided to the audience to date, va^+ is the

frequency of words or passages supporting and encouraging action present, and va^- is

the accumulated frequency of passages or words promoting or encouraging inaction.

Given the possibility that a particular message may be entirely action negative or

positive, the ratio incorporates an arbitrary base of one, 1, to eliminate the possibility

of a mathematically undefined ratio. The natural logarithm is then taken as a

standardization measure.

Constraint Recognition

The constraint recognition component is a bit more involved, and is defined as

a combination of constraint referents or denials in communicated messages, an

embellishment score, and a measure of the physical impact, in terms of casualties,

associated actions of the terrorist group convey. In the rhetorical context, constraint

recognition may be a bit more difficult for an observer to understand, depending on

how obtuse or how positive the textual messages of the terrorist are. Few communications are expected to highlight the costs of joining the struggle, promoting instead the virtues or gains associated with the terrorists' efforts. What conception of constraint that might exist may well be dependent on the interpreter's perspective, rather than any text present in the message. The symbolic component, in similar fashion, may be largely dependent on interpretation, but such interpretation may be easier for many given the visual and emotional impact of a violent act and of the government's response.

Rhetorical Constraint Recognition

Rhetorical constraint recognition poses what may be a difficult aspect of persuasive communications for the terrorist. On the one hand, the terrorists' message must convey a realistic sense of constraint, limitation, possible negative consequence of action. On the other hand, the message must find an effective way of encouraging recipients to minimize, compartmentalize, accept, or disregard the potential negative consequences that may be associated with acting on behalf or in conjunction with the terrorist group (the "constraint negatives"). The message must convey a sense of purpose as well as an expectation of ultimate gain or benefit while simultaneously expressing confidence in the outcomes of action despite, or in some instances because of, hardship that might have to be endured in pursuit of the desired outcome of activity. Passivity or inaction, which might be the more typical response to recognition of the possibility of sanction (the "constraint positives"), must be overcome in the mind of the message recipient such that when weighing the benefits of acting and risks of inaction, action is chosen. Those recipients already risk

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acceptant need to be encouraged, while the more risk adverse recipients need to be convinced that the risk is not as undesirable as supposed or can somehow be mitigated to an acceptable degree. Rhetorical constraint recognition, as a result, consists of 405 words designed to convey a sense that the resultant benefits of action outweigh any anticipated consequences. Rhetorical constraint recognition, α, the first component of message constraint recognition, is calculated as:

$$\alpha = 1 + \frac{(1+vc^-)}{(1+vc^+)}$$

where vc^- is the frequency of words or passages minimizing the impact or likelihood of possible negative sanctions and vc^+ is the frequency of words or passages that encourage passivity and inaction or highlight the probability or impact of any resulting negative sanctions. An arbitrary base of one, 1, is added to the measured frequencies of both constraint negatives and constraint positives, and to the ratio itself both to avoid the possibility of a mathematically undefined ratio and to ensure the calculated rhetorical constraint recognition measure does not negate the impact of the embellishment or symbolic content components.

Embellishment

In addition to expressions of risk acceptability engendered in the constraint negative – constraint positive ratio, measurement of overall constraint recognition must also account for the degree to which textual content is modified or qualified, since heavier modification and qualification would be expected to deemphasize the

desirability of action and risk acceptance in the message. This measure, called

embellishment,[53] β, is calculated as:

$$\beta = \frac{(1 + v\,praise)}{(1 + v\,blame)}$$

where *praise* and *blame* are content dictionary categories specifically developed for

the generation of the embellishment score. The *praise* category consists of 226 words

or word senses that convey a sense of praise, approval, affirmation, or support for

actions or conditions. *Blame*, as a category, consists of 373 words or word senses that

convey a sense of evil, ill will, denigration, inappropriateness, or unfortunate

circumstances. A higher ratio, or embellishment score, would suggest text more

attuned to emphasizing the desirability or approval associated with action.

Constraint Recognition Calculation

Combining the rhetorical and symbolic components of constraint recognition

with an embellishment score yields a measure of message constraint recognition

consistent with the most widely accepted theories of persuasion. The rhetorical

components, rhetorical constraint recognition and embellishment, act directly on each

other, offering a clear expression of the extent to which the terrorist group crafts a

consistent message either de-emphasizing risk of action or re-defining existing risk as

a desirable consequence of action. Symbolic content of the terrorists' message,

engendered in the symbolic constraint recognition, acts on the product of rhetorical

interaction, elevating the measure to a more inclusive level by acknowledging the

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[53] The embellishment score is adapted from similar content categories used in Roderick Hart's (1984, 1985, and 2000) Diction content analysis software.

degree to which effective messages offer consistency between words and deeds.
Thus, constraint recognition, γ_R, is described as

$$\gamma_R = \ln(\alpha\beta)$$

where the natural logarithm of the product $\alpha\beta$ is used to standardize scores.

Symbolic Orientation

Consideration of the symbolic content is a measure is intended to parallel consideration of associated rhetorical messages. Whereas the terrorist must persuade an audience of the justness, the rightness, the appropriateness of his cause and actions, he must also conduct himself in ways mirroring and supporting those claims if he is to build and maintain political and social standing consistent with his own, and his presumed constituency's, expectations. From his audience's point of view, violent acts convey as much meaning, perhaps more, than any other message. Terrorist violence, as many have noted, is a form of political theater intended to create, maintain, and manipulate both perceptions and political and social agendas. The symbolic message of the terrorist would seem to have greater import if the acts and the way those acts are perceived and interpreted support the rhetorical expressions of issue identification, level of involvement, and constraint recognition.

Symbolic message representations address the extent to which the terrorist's chosen targets reflect the issue or problem highlighted as a source of conflict by the terrorist. Three pairs of targeting attributes, combined with measures of weapon selection and attack severity, are used to generate a score reflecting the consistency and congruence of the symbolic message conveyed by a terrorist's actions. Targeting attributes are:

Targeting Attribute	+1	-1
Societal Locational Intimacy	public foreign selective	private domestic indiscriminate

The societal attribute seeks to capture and articulate the apparent focus of the violent attack. Terrorists typically identify a government, either its own or a foreign state's, as its primary target. Consequently, a greater action – message congruence is expected when that institution or its representatives are targeted. As a result, attacks directed against government facilities, symbols, institutions, or representatives, or attacks against those entities widely considered closely associated with government or governmental policies and practices, are considered *public targets*, and assigned a value of one, +1. In the Israeli-Hamas, for example, Israeli Defense Forces (IDF) facilities or personnel, infrastructure such as transportation hubs or modes, and settlers and settler activities are considered public targets since each is either part of the Israeli government or enjoys the support and protection of government. Area attacks, where no specific target exists otherwise, such as Hamas mortar and rocket attacks on populated areas, including settlements, are deemed attacks on *private targets* due to the notorious inaccuracy of these weapons. Attacks against private targets are assigned a value of negative one, -1.

The locational attribute is relatively straightforward. Attacks take place either within the borders of the terrorists' home state or they occur outside that state's borders. While some attacks, particularly high-casualty attacks commonly referred to

as "spectaculars," can have a significant impact on a home state population regardless of location, particularly given the global penetration of electronic mass media, locational considerations remain of interest. Domestic attacks are often perceived with a higher degree of relevance and immediacy, highlighting the possibility that subsequent attacks on home soil could have a direct impact on an observer whereas attacks outside one's home territory offer some degree of perceptual insulation. For this reason alone, domestic attacks are taken to offer a greater opportunity to influence the perceptions, interpretations, and subsequent choices of individuals among the terrorists' presumed audience. Domestic attacks, carrying greater immediacy, can also convey a message that risks associated with action are overvalued, particularly as frequency of attacks increases. For the terrorist, attacks on home soil not only offer reinforcement of problem identification, they offer a compelling argument that action can be undertaken against the state with little or no risk. Attacks against *domestic targets* thus are assigned a value of positive one, +1, while attacks undertaken on foreign soil are assigned a value of negative one, -1.

The intimacy attribute builds on notions associated with entity identification in that attacks are assigned values based on the scope of an attack. Selective targeting, where the violence is limited to a highly selective and discriminating target set, while horrific, may be perceived by observers as somewhat less threatening than indiscriminate attacks. Assassination targets are selected because they meet specific criteria, conveying by that selectivity the notion that others are less likely to become victims other than by having the ill fortune of being in the wrong place at the wrong time. Indiscriminate or random attacks destroy any opportunity for an audience

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member to rationalize their own immunity, making these attacks more personally unsettling and frightening. As a result, attacks that are *indiscriminate* or *random* in their target selection may be perceived as less supportive of the terrorists' stated goals and objectives and are assigned a value of negative one, -1. *Selective targeting*, where victims are easily identified as having been specifically selected, may similarly offer observers an opportunity to believe themselves less vulnerable and help reinforce the terrorists' message of specific grievances, goals, and objectives. These attacks, then, are assigned a value of positive one, +1.

Weapon selection also affects the audience's perception of terrorist attacks, particularly as they relate to the discriminate or indiscriminate nature of the attack and the extent to which casualties are produced. By their nature, some weapons carry more shock value than others do, with more familiar weapons offering less shock value than more exotic weapons or those designed to create mass casualties. Assigning scores based on weapons selection, however, is quite subjective: weapons some may find rather ordinary may be quite shocking and terrifying to others. With this in mind, a scale for assigning value to weapon selection was developed that identifies the relative amount of kinetic energy released through weapon use as a defining criteria for assigning values. The greater the amount of kinetic energy associated with use of a particular weapon, the higher the assigned value. Since the emphasis here is on weapon selection as a reflection of the terrorist group's objectives, it is also expected that the audiences observing the terrorists' acts will interpret weapon selection as a concrete expression of intent. Weapons which release greater amounts of kinetic energy in their application are also more likely to result in

a larger circle of death and destruction, raising the possibility that any attack, regardless of how carefully targeted, may be seen as an indiscriminate attack. Values assigned to different weapon choices reflect both the relative level of kinetic energy released in its application and an expected interpretation of observers:

Weapon	Assigned Value
No weapon used, unknown	0
Non-explosive, non-projectile (e.g. knife, rope)	1
Handgun	2
Long gun (e.g. rifle, machine gun, shotgun)	3
Incendiary device (including arson attacks)	4
Non-incendiary explosives	5
Missiles and other heavy projectiles	6
Radiological devices	7
Chemical devices	8
Biological devices	9
Nuclear explosive devices	10

Much like assigning values for weapons selection, assigning values for attack severity is equally subjective. Greater immediacy, closer proximity, nature of the target, even the life experiences of observers, as well as a host of other factors influence the way in which a given attack might be perceived by observers. In an examination of the deterrent impact of Operation El Dorado Canyon, in which the United States bombed targets in Libya in 1986 in retaliation for Libyan involvement in the bombing of Berlin's La Belle Disco and other attacks, Prunckun and Mohr (1997: 267-280) develop and refine a severity scale to differentiate between small and large scale attacks. A modified version of the Prunckun-Mohr scale[54] is used here to

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[54] To modify the Prunckun-Mohr scale, values they assigned to various types of attacks were presented to three separate groups of 20 individuals, each group composed of both military and civilian students at the National Defense Intelligence College (formerly the Joint Military Intelligence College) in Washington, DC. Members of each group were asked to arrange the types of attacks presented in order, from most severe to least severe. Group averages were compiled from the combined individual orderings, and the resulting three scales were then added to that presented by Prunckun and Mohr. The resulting scale represented the average of the four combined ranking sets and was found to generally

assign severity values to different types of terrorist attacks. These values are intended to reflect a degree of observer reaction to attacks, based largely on perceived severity. The scores assigned are arranged along a 0 to 5 scale, with 5 representing the most severe:

Act	Score	Act	Score
Unknown	0.50	Armed attack	3.30
Theft	1.00	Robbery (with death)	3.30
Prison escape	1.00	Barricade (with hostage)	3.33
Threat or hoax	1.12	Letter/parcel bombing	3.39
Hunger strike	1.25	Explosive bombing	3.44
Arms smuggling	1.69	Skyjacking	3.58
Attempted bombing	1.77	Assassination/murder	3.82
Facility occupation	2.14	Car bombing	4.00
Armed robbery (no dead)	2.50	Suicide bombing	4.01
Sabotage	2.56	Missile/rocket attack	4.04
Sniping (at facility)	2.59	Chemical attack	4.43
Shoot-out with police	2.96	Biological attack	4.56
Incendiary / arson	3.02	Radiological attack	4.57
Transportation seizure	3.07	Nuclear detonation	5.00
Kidnapping	3.10		

Most often, media reports emphasize the number of people killed in an attack, resulting in longer-term remembrance of death tolls than of the numbers of wounded. Indeed, when reporting a terrorist attack, both media outlets and government authorities appear to gauge severity in terms of the number of people killed rather than in total casualties or in terms of property damage caused. Since the symbolic value of the attack lies in the impressions created among both public and audience, more highly scored attacks tend to reflect actions typically resulting in greater

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track with that originally presented by Prunckun and Mohr. There are differences, however, possibly resulting from the personal and professional experiences of the NDIC respondents as well as from changes in terrorist tactics and weapon lethality, particularly in car bombs, in the years between development of the original scale and the revision adopted here.

numbers of casualties or, in the case of nuclear chemical, biological, radiological, and nuclear attacks, expectation of total casualties in the event of such an attack.

Constraint recognition must also take into consideration the symbolic message contained or inferred in acts of violence authored by the terrorist. A greater degree of congruence seen in physical acts and rhetoric should serve to reinforce the message transmission efforts of the terrorist. Lesser congruence would be expected to work at cross-purposes for the terrorist, sowing confusion among members of the targeted audience over terrorist goals and expectations or serving to suggest the rhetoric of the group is somewhat lacking in veracity. For a rhetorical message to have resonance with a targeted audience, meaning inferred in acts by that group must be seen as directly tied to the expressed goals and intents of the group. Focusing rhetorical attention on real or presumed evils stemming from one source, for example, then targeting violence against a distinctly different target set undermines the intended message and minimizes the group's ability to convey a persuasive message. To capture the potential impact of actual or inferred congruence between a terrorist group's words and deeds, a ratio of casualties directly associated with expressed group goals and purposes to total casualties is included. Since many attacks result in no casualties, each part of the ratio is augmented by one.

In calculating the symbolic orientation, locational attribute scores are combined with entity attribute scores as a reflection of the expected perceptual impact of geographic proximity and target identification. Given the scope, immediacy, and reach of electronic media, none of these attributes are expected to have a significant impact on its own. Rather, the combination of target identity and geographic

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proximity act in concert to shape perceptions of terrorist activity, leading to use of the average of the two attribute scores instead of the sum of attribute values for all attacks in a given month. This score is then combined with the full value of scores representing weapon selection and attack intimacy, reflecting the greater perceptual impact of weapon choices and specificity in target selection. Then resulting figure is then combined with the number of attacks in a given month and the averaged severity scores for those attacks:

$$SY = (\frac{1+\varphi\ direct}{1+\varphi\ total})/(n_m)\ [S\ (\tau+w+i)]$$

where SY is symbolic orientation, $(\frac{1+\varphi\ direct}{1+\varphi\ total})$ represents the ratio of directly related casualties to all casualties, n_m is the number of attacks by the terrorist group in question in a given month, S is the averaged severity score of those attacks, τ represents the averaged sum of locational and entity attribute scores, w is the averaged monthly weapon selection scores for that month's attacks, and i represents the average intimacy attribute score for that month's attacks.

Methodological Strategy

This project seeks to advance and test two related propositions. The first is that for terrorist groups to maintain effective operational viability over time and exhibit positive evolutionary growth, they must identify and maintain a supportive constituency among that segment of the population they claim to represent. The second holds that a test can be developed and used allowing assessment of a terrorist group's chances of positive evolutionary growth, based on the extent to which that group's words and deeds identify or establish common cause for action consistent

with the terrorist's stated goals and objectives. To test these propositions, a measure has been created, called expected affinity, which if validated will help address both propositions.

Expected affinity is fluid and changing, depending on the accumulated actions and statements of the terrorist group, its opponents, and the targeted audience the terrorist seeks to reach. With each new statement, announcement, or communiqué from the terrorist, and with each violent attack undertaken or attributed to the terrorist, the expected affinity score assigned to that group should change, reflecting resulting changes in perceptions, attitudes, and levels of approval or disapproval. The interaction between terrorist and their presumed constituency is anything but static.

To test the utility of the expected affinity measurement, information on both the terrorists' attacks and the content of the messages he relays to his presumed constituency are needed. While there is a wealth of such information available for research, the quality and consistency of data can, and often is, inconsistent at best and unreliable at worst. Attack data is often subject to a range of interpretations, resulting at times in significant disagreement between purportedly equivalent data sets. While many of these differences stem from definitional differences, some can also be attributed to ideological or political agendas of dataset compilers. The same holds for text collections, with differing compilations frequently varying in scope and inclusiveness. These differences are mitigated in this project by using only that data found in multiple datasets, suggesting general agreement on the merits of inclusion.

Since its founding in 1987, Hamas has released a significant number of statements of varying lengths and purposes. This study uses 176 statements released

to the public, spanning the months from October 1998 to January 2002. While these 50 months represent only a portion of Hamas' existence, the documents gathered from those months represent a dynamic period of Hamas' growth and development, including a period between the 1st and 2nd Intifadas where civic engagement and political maneuvering tended to dominate. The period also includes the opening months of the more violent 2nd Intifada, when Hamas' use of unguided mortars and homemade rockets supplanted its use of suicide bombings. This period also saw the beginnings of active conflict between Hamas and the rival Fatah movement. In addition, these documents represent a selection of communications that offered statements in both Arabic and English, allowing for random checks of texts published in English with their Arabic originals to gauge reliability of translations.

Seventy-four documents from the Red Army Faction are used, representing a time span of 324 months, or the effective lifespan of the organization. Unlike Hamas, the RAF underwent periods of relative inactivity, both in actions and in text releases, leading to a number of gaps, sometimes spanning months. The documents, however, offer an excellent view of the RAF's evolution, since documents include those produced and released by the first generation leaders as well as various leadership groups that emerged over the course of the organization's three decades. Included in the collection used are major ideological statements, pleas for action channeled through media interviews, and the organization's final statement declaring an end to the RAF and its armed struggle. These documents also represent a collection of documents for which reliable English translations and German originals exist, allowing for greater confidence in translations' reliability.

The Symbionese Liberation Army enjoyed a much shorter operational

lifespan, barely two and a half years, and consequently has fewer documents to offer.

In all, 22 documents or transcripts produced by or attributed to the SLA are used,

spanning the entirety of its operational life. This collection included statements

written and distributed by the organization's original leaders as well as statements by

the second generation leadership that emerged following the May 1974 shootout with

the Los Angeles Police Department that lead to the deaths of most of the SLA's

members. Latter documents are those published by the survivors seeking to regroup

and reconstitute the organization.

All documents used were used in their entirety, rather than parsed or

otherwise manipulated. Use of the entire document, including any title and

introductory information found in the original allows for consideration of the overall

impact of the text, building on the belief that the terrorists' ability to gain and

maintain a supportive audience depends on the totality of the impact it makes through

words and deeds on its intended audience. Consequently, minimal adjustments were

made to the texts, and only done to make each compatible with the features and

requirements of the content analysis software used.[55] Once prepped, texts were

imported into WordStat 5.1, an integrated content analysis package developed by

Provalis Research, where they were assessed using content categories specifically

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[55] Specifically, brackets ([ ]) were converted to braces ({ }) or parentheses, and all numbers were rendered in Arabic numerals. In the WordStat software used, brackets carry a specific meaning, directing the program to consider only text found enclosed by brackets. Braces instruct the WordStat software to ignore enclosed text. As a result, only those brackets containing footnote numbers were converted to braces. All those containing text of any sort were converted to parentheses, which convey no special instructions to the software program. Numbers were converted to Arabic numerals for consistency, insuring that in any instance where a numerical term affected content analysis results, they would affect results in a consistent and uniform manner.

developed for generating the data leading to expected affinity calculations.[56] In order to impose regularity and consistency on the data, documents from each organization were consolidated by month, resulting in problem recognition, level of involvement, and constraint recognition scores calculated for each month where reliable documents exist. In doing so, variances resulting from the organization's differing publication schedules and practices are avoided.

Attack data was gathered from multiple sources, offering an opportunity to combine datasets, eliminate duplicate, questionable, and incomplete entries, and develop a single dataset for each group's attacks. In combining existing datasets in this way, variances in act inclusion based on perspective, interpretation, or conscious or unconscious compiler agendas can be minimized. From the resulting dataset, information on attack date and location, target identity, weapon use, attack type, and casualties was extracted and used to generate both constraint recognition score components and symbolic orientation data. Where information was available, self-directed violence, particularly voluntary hunger strikes, were included since these actions were undertaken for the express purpose of generating publicity and promoting anti-government feelings among the public. Attacks against other militant or terrorist groups, however, were not included, since these acts were judged to have been undertaken not for public consumption and consideration but to hamper the effectiveness of rivals other than the targeted government.

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[56] Content categories were built using Grunig's (1976, 1982, 1984) situational theory of publics. Using General Inquirer categories as a base, refinement was also informed through use of Osgood, et.al. (1957), Levelt (1978), Flores d'Arcais (1978), Riesbeck and Schank (1978), Eco, et.al. (1988), Hogenraad and Bestgen (1989), and Smith, et.al. (1992).

From the rhetorical data engendered in calculated problem recognition, level of involvement, and constraint recognition scores and the symbolic orientation scores generated from attack data, an expected affinity score was calculated for each group, by month, where data available data allowed. In a number of instances, however, reliable rhetorical data was unavailable, skewing any calculated expected affinity to zero. For continued assessment of the expected affinity calculation, these scores were discarded as missing data. For those months in which rhetorical and symbolic data allowed realistic generation of an expected affinity score, results were expected to span a rather wide range of values, particularly given the scoring of attack severity and the generated problem recognition scores, especially in later messages that enjoyed a foundation of year's worth of accumulated repetition of problem identification and emphasis.

Visual Analytics Applications

To allow for a meaningful comparison of the trends in expected affinity for each group, and for meaningful comparison between groups, problem recognition, levels of involvement, and constraint recognition scores are plotted over time, allowing for a visual examination of month-by-month variability. By relying on visual analytics rather than more usual statistical tests of correspondence, this analysis transcends the limitations imposed by differing environmental contexts coupled with the lack of a common referent standard that could be equitably applied across the three cases examined. Defined as "the science of analytic reasoning facilitated by interactive visual interfaces," (Thomas and Cook, 2005: 4), visual analytics offers a means through which useful insights can be effectively derived from massive

amounts of data or highly variable and unstandardized data, particularly where patterns and relationships might be otherwise missed . As an interdisciplinary field, visual analytics remains an emerging field which includes active research in a number of areas including visual representations and data representations and transformations, as used here (see, for example, Tufte, 1969; Keim, et.al. 2006; Gregory, et.al. 2006; Yang, et.al. 2007; Ghoniem, et.al. 2007; and Wang, et.al. 2008).

In this assessment, problem recognition, level of involvement, and constraint recognition scores are plotted over time, represented in months elapsed since the subject group's emergence, followed by analysis deigned to generate a best-fit regression curve to the data. The resulting graphs are then supplemented by the inclusion of time-line data of significant events in the subject group's history, allowing visual comparison of score variations in temporal comparison to significant affective events in the organization's history. This type of visual representation thus allows for the identification of potential changes in rhetorical efforts in response to environmental and situational stressors. Graphical presentations of symbolic orientation illustrate the intensity of violent activity attributed to each group, adding additional comparative data through which each subject group's persuasive efforts can be assessed. A final set of graphical representations is then generated, plotting the generated expected affinity score over elapsed time, in months, affording an otherwise unavailable opportunity to compare variations in expected affinity scores with group actions, stressors, and events. This comparison, then, forms the basis for determining if the newly created expected affinity metric offers opportunities for assessing group evolutionary potential and predicting evolutionary trajectories.

Fitting a regression curve to time plots of expected link affinity may allow for the calculation of the slope of the line at any given point in time which, if the created measure offers utility, should reflect the evolutionary status and direction of the subject group.

There are, however, limits to what can be done by taking such an approach. Questions about how much expected or potential affinity is enough cannot be addressed until a demonstrably effective measurement of the affinity a targeted constituency actually holds for the subject group can be developed and applied. At present, the best indicators available are sporadic opinion polls that are rarely designed to ferret out true sympathies for terrorist groups among poll respondents. Whether because of respondents' desire to ensure personal security leading to evasive, misleading, or untruthful answers, by poor penetration of poll takers into areas of conflict or widespread opposition, or the weight of cultural, societal, or political pressures, polling data offers a poor indicator of support for terrorist groups. Similarly, observational means of assessing terrorist support are notoriously unreliable given the clandestine nature of terrorism and terrorist support activities.

Similarly, the degree of affinity necessary for positive evolutionary growth cannot be determined until further studies are conducted, allowed a more nuanced and deeper understanding of the roles played by environmental factors, presence or lack of initiative, arms and safe haven availability, and numerous other additive or mitigating factors. It is possible, however, to assess the general direction of evolutionary progress despite the wide range of complex interactions present. Fitness calculations, such as those generated through use NK, fitness, and similar models, as

usually used, would afford an assessment of the opportunity for evolutionary progression, or point to evidence of past evolutionary development, but offer little through which to determine the potential future. The local minima and maxima identified through these methods offers considerable insights, but must be tempered by the realization that the environmental context in which these minima and maxima appear are different for each subject group. Visualization of the linkages between terrorist and presumed constituency, as expressed through an expected affinity score, helps to highlight trends and patterns. While any trends or pattern identified is subject to unexpected change, visualization can help describe the possible future trajectory in the absence of significant shocks to the interactive dynamic being modeled.

The Cases: Hamas, the RAF, and the SLA

Cases used to test the validity of the measure are the Palestinian Resistance Movement (Hamas), Germany's Baader-Meinhof Gang/Red Army Faction (henceforth discussed as the Red Army Faction, RAF, for the sake of simplicity), and the Symbionese Liberation Army.

Hamas is used because it offers clear example of a terrorist group that has evolved to become a mass movement and subsequent legitimate claimant to power. Regardless of opinion about the status of Hamas, it has successfully grown from a small-scale conspiracy to a mass movement of sufficient size, ability, organization, and complexity to win not only a mass following in Gaza, and portions of the West Bank, but also elsewhere in the Arab world. That development has been relatively rapid, leading to Hamas's emergence from the January 2006 Palestinian elections as the elected government in the Palestinian Authority. At the same time, Hamas has

continued its violent attacks on Israel and Israelis, as well as on its rivals in Palestinian politics, often by secretive and violent means. Hamas, then, represents one extreme that, if the measures developed here are valid, will exhibit the expected evolutionary progress with anticipated rhetorical and symbolic measures.

The RAF and SLA, on the other hand, offer clear examples of terrorist groups which failed to achieve either mass movement status or standing as a viable claimant to power. However, they are also different, affording an opportunity to fine-tune the measures and approaches developed here. The RAF lasted roughly 30 years, with the German authorities unable to defeat and destroy the group. Rather than facing defeat at the hands of German authorities, the RAF ending its armed struggle of its own accord in 1998 after concluding the German public was unable to recognize its proper role in the revolution and act accordingly. Nevertheless, the RAF maintained over three decades enough of a supporting constituency, primarily among radicalized German workers and students, that it was able to maintain some degree of operational capability over time, and to attract new recruits, despite a long string of government success against the group. The SLA, on the other hand, lasted only a short time as a viable entity before being defeated by law enforcement authorities. The RAF and SLA, further, had enough similarities that a comparison is warranted – both operated in liberal western democracies, espoused a vaguely Marxist-Leninist philosophy although each was actually more anarchist in scope, and both claimed to work on behalf of the oppressed workers against the exploitive ruling class.

Data and Data Collection

Since this study focuses on the effort of terrorists to gain and maintain a

supportive constituency through its rhetorical and symbolic communications, the

primary source material for content analysis of the messages the group presents are

the communiqués, statements, and claims of credit issued openly to a wide audience

in their area of operations. Internal group communications and communications

directed primarily to law enforcement or security service are not included, since these

messages are typically not intended for a wider audience. Similarly, assessments,

biographies, histories, and synopses of each group written by observers, the press,

government officials, or scholars are not used, since each of these represents an

outsider's interpretation of the group, its activities, or its communications. For the

RAF and SLA, this body of data is represented by statements sent to the press in their

respective countries, as each group sought to widen its pool of message recipients by

leveraging the media as a witting or unwitting message transmission service. These

messages can be found in printed anthologies and on web sites devoted to study or

support of either group.[57] SLA communications are found in the original English,

while RAF communications are originally in German, although this study uses

English translations verified for accuracy.

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[57] Red Army Faction communiqués can be found at either URL http://www.baader-meinhof.com or URL http://www.germanguerilla.com/red-army-faction/. Various other sites have, at times, collections of relevant documents, but many are sporadic in their appearance on the Web. The same holds true for Symbionese Liberation Army documents, although URL http://sladocuments.com/ has been a fairly steady presence. Also helpful in the search for SLA-related materials were detectives in the Anti-Terrorism Division of the Los Angeles Police Department who, given their assignments, wish to remain anonymous.

Hamas statements, communiqués, and claims of credit offer a slightly more problematic dataset. Unlike the RAF and SLA, Hamas and its supporters maintain its own web site, where communiqués, statements, demands, and claims are posted in both Arabic and English. In this study, English versions of Hamas statements, pulled directly from the organization's own web site,[58] are used, thus ensuring that that the statement provided is that intended by Hamas and not subject to mistranslation or interpretation by others. Use of English language versions, however, does open the possibility of error, since Hamas, like many groups offering statements in multiple languages, has been suspected of offering substantially different versions where there is expectation that different audiences will peruse the different versions. Arabic language statements by Hamas may, in fact, be substantially different from English language versions, especially if the organization expects the English language versions to be consumed primarily by outsiders, rather than the Palestinian public. Nevertheless, English language versions provided by Hamas are used because they are original translations of messages provided directly by the group in question and because the immediate intent of the present study is on determining the feasibility of the measures developed, rather than the direct applicability to a particular socio-political dynamic.

Events data are culled from a number of sources, and, unlike statements, are generally not subject to purposive manipulation. A dataset is constructed using multiple sources, offering details about time, date, location, weapon(s) used, target(s)

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[58] Hamas has made many of its documents available over the years, although at times cyber-wars between Palestinian and Israeli activists hinder access. Steady resources for Hamas documents include the Palestinian Information Center site, available at either URL http://www.palestine-info.co.uk/ or URL http://www.palestine-info.com/hamas/communiques.index.htm.

attacked, property damage incurred, deaths and injuries, claims and competing claims of credit, and additional details as available. This dataset was then reviewed to ensure that each action included not only represents an attack by one of the groups chosen for this study, but that there were no duplicate entries resulting from slight differences in source materials. Where questions arose about the nature of an entry, original and follow-up press reporting and peer-reviewed chronologies[59] were consulted to resolve differences. Once finalized, the dataset of attacks was then coded, as described above in the constraint recognition, problem recognition, and referent criterion discussions.

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[59] Multiple sources were used to develop a dataset unique for this project. Sources used included datasets developed or maintained by the International Institute for Counter-Terrorism at the Interdisciplinary Center, Herzliya, Israel (available at URL http://www.ict.org.il); the National Consortium for the Study of Terrorism and Responses to Terrorism (START) at the University of Maryland (available via URL http://www.start.umd.edu/start/); the Terrorism Research Center (available via URL http://www.terrorism.com); IntelCenter (available via URL http://www.intelcenter.com), and; the International Terrorism: Attributes of Terrorist Events (ITERATE) database, developed by Edward F. Mickolus, Dunn Loring, VA: Vineyard Software.

Chapter 5: Establishing a Foundation for Expected Affinity

Good models offer a representation of reality, rather than a complete reconstruction of reality. Models, when designed and used effectively, capture the most salient components and interactions of the system under observation, offering a picture of the most relevant aspects of that system and leaving out those that are not germane to the questions being addressed. Models are not perfect reflections of what exists, and should not try to be. Rather, they are distillations of that reality, designed and constructed to highlight, and at times isolate, the actors, actions, and interactions deemed important to understanding one or more aspect of the system and systems like it.

Which elements and interactions in the system are incorporated in the model depends, in turn, on the questions being asked and on the perceptions and interpretations of the researcher. Some of the more enduring questions associated with terrorism reflect an abiding interest in the causes of terrorism, the triggers of violence, target selection and command decision making within terrorist organizations, radicalization of its members, and ways in which terrorism ends. For each of these areas, unfortunately, there are few, if any, good answers.

One of the reasons why terrorism studies have yielded few good answers stems from the models used to address the important questions. Models used emphasize the shock and fear brought about by terrorist violence, the unique history and qualities of a selected terrorist group, the ideological underpinnings of the group's motivations and objectives, or a structuralist vision of terrorism intended to offer insights into the exploitable organizational weaknesses of terrorist groups. Few

models of terrorism attempt to address the dynamics of terrorist – audience interaction, and even fewer assign any value to the salience of intra-group interactions. This project takes a first needed step away from the dominant models of terrorism and shifts emphasis to the functional couplings between terrorist groups and their presumed audiences and constituencies.

Where some emphasis has been placed on the interaction between terrorist and public, much reflects a belief that the predator-prey model offers an accurate and usable basis for examining the relationship. Where terrorism is examined largely in terms of its violence, or when it is examined in a counter-terrorism context, the predator-prey model serves well in capturing many of the most important aspects. Expanding the perspective a bit, however, exposes the limitations of the predator-prey model. Terrorists and their adversaries are not always in direct competition with each other, although there is significant direct conflict between the two. Most terrorist groups understand at some level that they cannot match the government's ability to apply force, nor can they match or sustain the level of lethality governments can bring to bear. Terrorists often choose to direct violence and the threat of violence to third parties, the innocent uninvolved public. Few, if any, terrorists believe they can directly cause the downfall of their adversaries and choose instead an indirect approach, creating a climate of fear and intimidation where the government must either accede to the terrorists' demands or comply and risk alienating the public. Applying a predator-prey model to terrorism assumes that the antagonists compete over the same resource set and that those resources are finite, with gains by one side equaling losses of the other.

Terrorism, however, is a competition over a variable and fluid resource where gains by one side do not necessarily equal losses of the other. The resource competition is characterized by multivalence rather than bivalence, where both sides can win or lose at the same time. This project captures the fluid, multivalent character of the conflict by suggesting a better model. Societal groups often have membership overlaps, leading at times to instances in which an individual might be a member of a pro-government association while simultaneously holding affiliation in a second organization supportive of the government's opponents. A coevolutionary model of terrorism allows for such duality, whereas a predator-prey model would not.

Coevolution can be one of three types. In indiscriminately coevolutionary systems, actors adapt and change without having a direct affect on other actors in the system. Where adaptive activity by one actor changes the environment, thus changing the environmental pressures on other actors, forcing them to adapt, the adaptation remains neutral with respect to the relative fitness of other actors in the system. Symbiotic coevolutionary systems are those in which adaptations benefit groups of actors such that adaptations by one forces change in others and all find increased fitness levels as a result. The terrorist – audience – government relationship is of the third type, a competitive coevolutionary system. Here, adaptation or change by one lowers the relative fitness of others, forcing them to adapt in ways they hope will increase their own fitness.

Searching for the Predictive Model

The present work seeks a way to evaluate the evolutionary growth potential of terrorist groups. It does so by testing the proposition that the communicative link

between terrorist and a presumed constituency is critical for maintaining and growing the terrorist's operational viability, a necessary condition for positive evolutionary development. Testing that proposition, in turn, involves the creation of a new social network analysis measure, called expected link affinity, designed to allow estimation of the relative strength and resiliency of linkages between coevolutionary system actors. In order to test the efficacy of such a metric, three groups were selected as a test based on either current status or group history – Hamas, because it has transitioned from small, conspiratorial terrorist group to mass movement and *de facto* government and both the Symbionese Liberation Army (SLA) and the Red Army Faction (RAF) because of their similarities yet strikingly different operational capabilities and longevity.

Social network analysis addresses the structure and behavior of linked actors within a common system. One of the principal arenas for exploration in this discipline lies in exploring and understanding the relationship between network characteristics and the resulting social and interactive structure that arise from network topography. Here, emphasis is placed on deriving knowledge about socially distinct groups, their organization, their interactions, and their similarities and differences. A second principal arena for exploration lies in the structural aspects of the network in question, particularly in terms of ways in which network topography dictates the flow of information between network nodes. Accordingly, metrics emphasize network node clustering, the presence or absence of linkages between nodes, the number of nodes that must be transitioned moving from one node to another (the centrality of a given node), prestige, transitivity, and structural equivalence – all of which address network

structure or nodal behaviors stemming from such structures. Even Granovetter's

(1973, 1983) *weak ties* address the density of ties between nodes rather than any

inherent or emergent strength of a particular tie or set of ties. Expected link affinity

supplements current social network analysis metrics by addressing the strength of

node-to-node connections, treating that strength as a function of shared causes, agreed

upon beliefs or purpose, and the degree to which action constraints and expectation of

negative behavioral inducements might be overcome.

Hamas (Harakat al-Muqāwamat al-Islāmiyyah)

Hamas, the Islamic Resistance Movement, was founded in late 1987 by

Sheikh Ahmad Yassin, Abdel Aziz al-Rantisi, and Mohammed Taha, at a time

corresponding to the beginning of the first Intifada, or uprising, against Israeli

occupation of the Gaza Strip. Despite its origins in the Egyptian Muslim Brotherhood,

Hamas has insisted that its struggle is not a religious struggle between Muslims and

Jews, as is often assumed, but a struggle for human rights and liberation from

occupation and oppression by the Israeli state. The pervasive use of Islamic discourse

in its statements, both internal to the organization and external, is claimed to reflect

the prevailing cultural perspectives of both Hamas' members and Hamas'

constituency rather than any overt religiosity. Nevertheless, Hamas' charter is

steeped in the language of Islam, couching its conflict with Israel in religious terms:

> This is the Charter of the Islamic Resistance Movement, showing its form,
> revealing its identity, stating its position, clarifying its expectations,
> discussing its hopes, and calling for aid, support, and a joining of its ranks,
> because our struggle with the Jews is long and dangerous, requiring all
> dedicated efforts. It is a phase that must be followed by succeeding phases, a
> battalion that must be supported by battalion after battalion of the vast Arab

and Islamic world until the enemy is defeated and the victory of God prevails.
(Hamas 1988, reprinted in Hroub 2000: 268)

More generally, Hamas offers a sophisticated ideology grounded in Islam but centered on the organization's desire for the liberation of all lands claimed by Palestinians. Hamas, however, is much more than a violent organization, building and maintaining a wide variety of schools, medical clinics, and social welfare organizations in Gaza and the West Bank. Membership has fluctuated through the years, but Hamas succeeded in building an organization sufficiently large and capable to challenge Yasir Arafat's Fatah, claiming status within the Palestinian resistance movement equal to or greater than Fatah and, in 2006, posting an overwhelming win in Palestinian legislative elections. Since taking 74 of 132 seats in the legislature, Hamas has broken with the more widely accepted Palestinian Authority, effectively expelling Fatah, the Palestine Liberation Organization (PLO), and the Palestinian Authority from the Gaza Strip.

Violence has remained one of the Hamas' principal means of pursuing its liberation goals. Since its founding, Hamas has developed and employed a wide variety of tactics and capabilities, including suicide bombings in occupied Palestine and within Israel proper, and the employment of mortars and short-range homemade rockets. During the initial months of the 1st Intifada (1987-1993), Hamas actions tended to center on low-level violence and agitation, seeking perhaps to leverage widespread Palestinian discontent and channel the frustrations of ordinary Palestinians toward confronting Israeli authority in frequent street-level actions. Perhaps due in part to the Gulf War's diverting attention away from the Palestinian cause, Hamas created a military wing, the Izz ad-Din al-Qassam Brigades, in 1992

and began to increase the tempo of violent attacks against Israeli government targets. The Oslo Accords of 1993 offered the prospect of a negotiated peace between the Palestinians and Israel, undermining to an extent Hamas' rational for violence, but did not significantly reduce Hamas sponsored violence. Following an attack on the Cave of the Patriarchs by a militant Israeli settler in February 1994, Hamas expanded its typical target set to include Israeli civilians and settlements. Two months later, Hamas staged its first suicide car bombing against Israel.

In the fall of 2000, Israeli Prime Minister Ariel Sharon visited the Temple Mount in Jerusalem, triggering widespread Palestinian anger and offering the immediate cause for the 2nd Intifada. The violence between Israel and Hamas escalated, with Hamas expanding its suicide attacks and rocket attacks against Israeli settlements and Israel significantly expanding targeted strikes against Hamas leaders. In July 2002, Israeli forces dropped a 1-ton bomb on Salah Shehadeh's house, killing the Izz ad-Din al-Qassam Brigades leader and 14 others. Ibrahim al-Makadmeh, another prominent Qassam Brigades leader, was killed less than a year later, and in September 2003 Sheikh Yassin, Hamas' founder, was wounded in an Israeli airstrike. Israeli further escalated actions against Hamas as the number and frequency of Hamas rocket attacks increased, leading to the March 2004 death of Yassin, the April 2004 death of Yassin's successor, Rantisi, and the September 2004 death of Eldin Subhi Sheikh Khalil, Rantisi's successor, in Damascus, Syria.

Red Army Faction

Germany's Red Army Faction offers a different developmental and operational model than that of Hamas. Emerging from the student protest movement,

the RAF came to symbolize disaffected rebellious middle class German youth of the late 1960s and 1970s. The development of the radical German left took a haphazard evolutionary path from commune to political group. Little was thought-out and planned, with the majority of individuals involved simply reacting to the environment and events of the times. The RAF was no exception, growing from the increasing militancy of a few individuals who reacted to police anti-crime efforts, with political ideology solidifying later. The shooting of Benno Ohnesorg by police on 2 June 1967 during a protest in Berlin against a visit by the Shah of Iran radicalized many among the German left, including the RAF's founders (Baumman 1977; Merkl 1995). Despite the ideological evolution of some German leftists, what would become the RAF remained largely focused on purely criminal activities, singly and collectively, for a few more years.

The anger over Ohnesorg's death and police reactions to the resulting protests led the mainstream German media to begin drawing clear distinctions between the radical students and the remainder of German society, further isolating and marginalizing the students. The tabloid press in particular painted the students in stark and uncompromising terms while agitating the larger German society by playing on their fears of the east, using headlines such as "Young Reds Want to Communise German Property" and "Stop Terror of the Young Reds Now." (Baumman 1977; Becker 1977; and Cook 1982) The only support for the students came from the already supportive leftist press, and it was from among that supportive press that a founder and catalyst of the RAF emerged.

Considered the voice of the anti-establishment movement, Ulrike Meinhof, an editor for the communist journal *Konkret*, joined with radical lawyer Horst Mahler in May 1970 to form the RAF proper. The new organization soon made itself known by organizing and executing the escape of Andreas Baader from custody. Baader, along with Meinhof, Mahler, Gudrun Ensslin, and other founding RAF members shared a vision of a socialist German society closely associated with Third World liberation movements (Merkl 1995). Despite the group's advocacy of a socialist German society, its ideology remained relatively obscure in that it failed to offer any clear vision of the nature of the society. Indeed, one of the more prevalent criticisms of the RAF has been that it was not a socialist group, as it portrayed itself, but rather an anarchist group focused simply on the destruction of the existing German state and society. Even other German militant groups questioned the RAF's ideology and program, leading one prominent June 2 Movement member to charge:

> … there was a tendency on the left to say R.A.F. isn't a political group anymore, because they no longer take part in any political dialogues. It was said they'd become criminals, who rob banks and live in expensive apartments, and drive around in expensive cars. It was after this that R.A.F. laid its bombs, in order to legitimize itself again as a political group; out of this emergency situation they started their insane bombing campaign, which was really wrong. (Baumman 1977: 109-110)

RAF "actions" followed a familiar path, with the first acts generally attributed to the group being April 1968 firebombings of several department stores in Frankfurt am Main, even though the attacks were actually undertaken by Baader, Ensslin, and several others individually in response to a challenge to Baader to follow through on his frequent calls for violent action. Through 1970 and 1971, RAF actions focused on bank robberies, car thefts, and violent run-ins with police during traffic stops, identity

checks, and other routine police activity. In February 1971, RAF violence took a more ominous turn when the Socialist Patients Collective, which had merged with the RAF, attempted to bomb the train used by the President of the Federal Republic. RAF leaders were further encouraged by an Allenbach Institute poll that indicated 20% of Germans under age 30 expressed some sympathy for the RAF and 10% of north Germans indicated a willingness to provide shelter for RAF members (Merkl 1995).

The RAF developed a decidedly more destructive and internationalist perspective by 1972, when they bombed several targets to retaliate for U.S. bombing in Vietnam and the West Berlin British Yacht Club in support of the Irish Republican Army. The authorities, however, enjoyed considerable success against the RAF later in the year, capturing and imprisoning most of the leaders by late August. Indeed, the earlier support the RAF seemed to enjoy largely disappeared due to the extent and savagery of RAF attacks. The RAF's standing in German public opinion would fluctuate in 1974 after the death of RAF member Holger Meins during a prison hunger strike and the RAF's retaliatory effort to kidnap the president of Germany's Superior Court of Justice, Günter von Drenkmann. To some, Meins was murdered by the authorities, leading to small support gains for the RAF, while others focused on von Drenkmann's death to call for greater efforts against the RAF (Huffman 1997). In subsequent years, RAF actions, coupled with several Palestinian-authored spectaculars in support of the RAF, focused on securing the release of RAF members from German prisons and further eroded the RAF's connection with its claimed public.

By 1977, the core of the RAF had been removed from active participation, with Baader, Ensslin, and Jan-Carl Raspe sentenced to life in prison and Meinhof dead by suicide. The RAF once again sought to free its leaders, this time kidnapping Hanns-Martin Schleyer in August. Almost two months later, a Palestinian team hijacked a Lufthansa flight, eventually landing in Mogadishu, Somalia, where the hijackers made a series of demands that included release of imprisoned RAF leaders. German's new counter-terrorist team, GSG-9, successfully rescued the Lufthansa hostages on October 17, after which three RAF leaders – Baader, Ensslin, and Raspe – perhaps sensing the futility of continuing the struggle, committed suicide in their Stammheim prison cells.

The deaths in Stammheim prison effectively ended the original RAF, although the group's second and subsequent generations continued the struggle. Each succeeding RAF generation, however, met with the same effective state response and public disapproval, limiting effectiveness and cementing its marginalization. Between October 1977 and December 1991, the nature of RAF activities remained much as it was during active operations of the group's first generation. The RAF's growing international perspective, however, became much more evident and failed just as miserably to generate mass support. The remaining RAF members announced the disbanding of the group in 1998, prominently citing that failure while simultaneously seeking to lay blame on German society's sloth and ignorance (RAF 1998).

Symbionese Liberation Army

The Symbionese Liberation Army offers another striking contrast to Hamas. The SLA emerged in California in early 1973, growing out of the discontent and

aspirations of then-recently escaped Vacaville prison inmate Donald DeFreeze. DeFreeze would later give himself a "revolutionary" name, Cinque, and lead his group on a roughly two-year campaign to bring about a proletarian revolution. Ideologically, the SLA claimed to follow a poorly defined and conceptualized Marxist-Leninist doctrine, albeit one with significant ethnic and feminist undertones. The group's ability to articulate their ideology was never well developed, perhaps because the members of the group exhibited little affinity or interest in ideological development. Although responsible for a number of violent acts, the group is best known for its murder of Oakland school superintendent Marcus Foster, who enjoyed considerable support from Oakland's poor and minority population, and the kidnapping and subsequent co-option of newspaper heiress Patricia Hearst. The SLA's violent activities were confined to California, particularly the San Francisco and Los Angeles areas, giving the group a very narrowly defined spatial dimension. In May 1974, six of the nine active SLA members perished in a shootout with the Los Angeles Police Department at a commandeered safe house in Los Angeles, leaving survivors Bill and Emily Harris and Patricia Hearst to attempt to reconstitute the group. For the most part, activities of the group following the May 1974 shootout were limited to a few robberies and failed bomb attempts. Membership was never more than a few dozen members and hangers-on, mostly middle class in origin, and relatively unsophisticated in both operational arts and its ideology. Efforts to build itself into a vanguard of the proletarian revolution tended to revolve around disorganized meetings on the fringes of the student movement.

Unlike Hamas and the RAF, the SLA seemed almost determined to deny itself effective connection with its claimed constituency. In its short operational life, the group released just 13 communiqués, declarations, and policy statements, as well as 6 tapes made and delivered for broadcast on area media. The earliest SLA document, its August 1973 "Declaration of War," set the tone for what would become a series of angry rants, and grandiose fantasies culminating in their last, the so-called "bathroom communiqué," a threat written on a restroom wall in late 1975.

Parsing the Texts

Hamas, RAF, and SLA texts and transcripts were processed using two separate content dictionaries. Analysis of message tone utilizes Martindale's Regressive Imagery Dictionary (Martindale 1979),[60] which offers approximately 3,200 words assigned to 29 separate categories of primary process cognition, 7 categories of secondary process cognition, and 7 categories of emotions. The Regressive Imagery Dictionary (RID) leverages the notion that psychological processes are mirrored in the content of text, and allows for the measurement of differences between primordial thinking – associative and concrete – and conceptual thinking –abstract, logical, and reality-focused. Analysis was accomplished by highlighting several categories and subcategories of the dictionary, and using these selected groups to indicate each of the three critical components of successful marketing identified in the situational theory of publics (Grunig 1976, 1982, and

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[60] Hogenraad, and Bestgen (1989) and Hogenraad and Nysten (1995) use a French adaptation of Martindale's dictionary, Dictionnaire d'Imagerie Regressive or DIRE, in their examination of Combatant Communist Cell communications. Martindale's Dictionary is also available for download from the Internet from the Provalis Research web site, URL http://www.simstat.com/RID.htm, in English, French, Portuguese, Swedish, German, and Latin versions.

1997). Validated through a number of studies, the RID offers a unique metric through which the expected affinity measure may be compared and validated.

Problem identification, identified as a critical component of successful persuasive efforts by Grunig, is highlighted using several secondary process cognition subcategories of RID. *Abstraction* is taken to suggest a thought process that the terrorist would seek to use to his advantage. Containing words such as *know* and *thought*, this word set offers a way of gauging the extent to which communications seek to engage the audience's reasoning processes. Additionally, the *restraint* word set is used to focus attention on the communicant's effort to engage his audience in reasoning. Containing words such as *must*, *stop*, and *bind*, this word set acknowledges the terrorist's effort to underscore the nature of a grievance or issue set which needs to be addressed.

The terrorist's effort to convey a sense of relevance and importance of the identified issue, another critical aspect identified by Grunig, is illustrated by emphasizing moral and behavioral aspects within RID's secondary process subcategory. The *morality* and *moral imperative* word sets suggest an appeal to a sense of what is, or should be, sought because of an ethical or virtuous quality beyond the mundane. Similarly, the *social behavior* word set highlights efforts to appeal to the public's notions of common good and shared expectations, while the *instrumental behavior* word set offers an opportunity to engage in appeals to the public's sense of common cause and action. These are analogous to the communicant's efforts to define a desired level of involvement and convey that belief to an intended audience.

To focus attention on Grunig's need for recognizing constraints, several subcategories of the Regressive Imagery Dictionary from the primary process cognition category are used. Among primary process cognition categories, the defensive symbolism subcategories of *passivity* and *chaos* are selected for use due to their focus on thought processes and labels associated with the need to overcome inertia in activity (passivity) and confusion, crowding, or ruin (chaos). Similarly, the regressive cognition subcategory's *unknown* word set offers an additional indicator of constraint recognition in highlighting secrecy and strangeness, both significant barriers to action. All three word sets are taken to offer indications of constraints to action that must be overcome, from the group's perspective, in order to convince the public that the utility cost of action is acceptable even in the face of potential limits or sanctions.

RID's categories and subcategories are used to get a general sense of the tone of each group's communications. Within the *emotions* subcategory, the *aggression* word set offers an opportunity to gauge the degree to which the communication's content emphasizes or focuses on the negative, the hostile, and the hated. Coupled with this is the *glory* word set, which offers a mechanism for assessing the degree to which the message praises and promotes positive or pleasant topics. The two sets taken together, in turn, offer an opportunity to assess the extent to which the message as a whole emphasizes the desirable or the undesirable.

As an adjunct, a second dictionary is used to assess the text. This dictionary, specifically designed to address the critical components of successful marketing strategies, rests on the category and subcategories first developed in the General

Inquirer tool (see Lasswell 1948 and 1968; Stone et. al. 1966).[61] Composed of approximately 8,300 words and word senses, this dictionary is divided into three categories, each of which contain a number of specified subcategories. The *Problem Recognition* category includes those words indicative of the existence of, or the desire for, a set of common goals and aspirations, understood purposes, objectives, and desires. Incorporated within this category are additional subcategories designed to assess senses of accomplishment or achievement. The *Level of Involvement* category includes words and word senses which suggest or indicate a sense of community, friendship, alliance, centrality, collective perspective, or rapport as they apply to definition and justification of appropriate activities and activity levels needed to successfully address identified problems. The *Constraint Recognition* category, in turn, includes words and word senses indicative of expectation of negative incentive, hardship, risk, or punishment that could lead a message recipient to avoid action.

Texts were processed by first converting each into ascii text files, then selecting and isolating the communicative portions of each file. Dates, organizational "signatures," comments, and notes (particularly on the SLA tape transcripts) were bracketed to prevent their inclusion in the content assessment. Text files were then processed using each dictionary separately in the WordStat content analysis software. Raw data, in the form of reported percentages fitting each category and subcategory, were then transferred into an SPSS data file from which statistics and illustrative graphs were generated.

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[61] The dictionary used was specifically constructed for this study. Built on a foundation of the General Inquirer and Lasswell's Value Dictionary, this dictionary is designed o reflect the concepts in Grunig's theory of publics. See footnote 52.

Message Tones

Comparing the textual records of the SLA, the RAF, and Hamas offers an interesting contrast. Hamas, as might be expected, exhibits greater consistency in its messages. The RAF and SLA, on the other hand, are much more erratic in the tone and context of their communications, indicating a much more variable approach to efforts to convey their thoughts, demands, and expectations. Hamas' communication efforts offer a markedly different picture, one suggestive of a greater appreciation for the nuances of both communications and the sensibilities and expectations of their intended audience. The RAF's wide variability may be the result of environmental changes, or of changes in group leadership over time. The SLA, in stark contrast, seemed to have little clear understanding of its audience, or care little if it did understand.

Looking at Hamas, RAF, and SLA messages over time (Figures 3, 4, and 5, respectively) illustrates that contrast. Using RID categories analogous to those developed for testing a situational theory approach to group messages shows Hamas messages offering greater cohesion over time as well as greater consistency. The SLA's communications also offer a vision of general consistency, although of a downward track, indicating less attentiveness to effective conveyance of its message. In each figure, the y-axis is word presence percentage and the x-axis is elapsed time in months.

The three groups show somewhat similar general tone characteristics in their messages over time, in each case emphasizing aggressive themes in a manner consistent with their environmental context. For Hamas, the percentage of message

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texts emphasizing aggressive themes exhibits a gradual, but variable, upward trend over time, corresponding to an escalating conflict with both the Palestinian Authority and the Israelis in association with the 2nd Intifada (beginning September 2000, month 154).

Figure 3:   Hamas Message Tone Over Time (elapsed)
Source: Author's construction
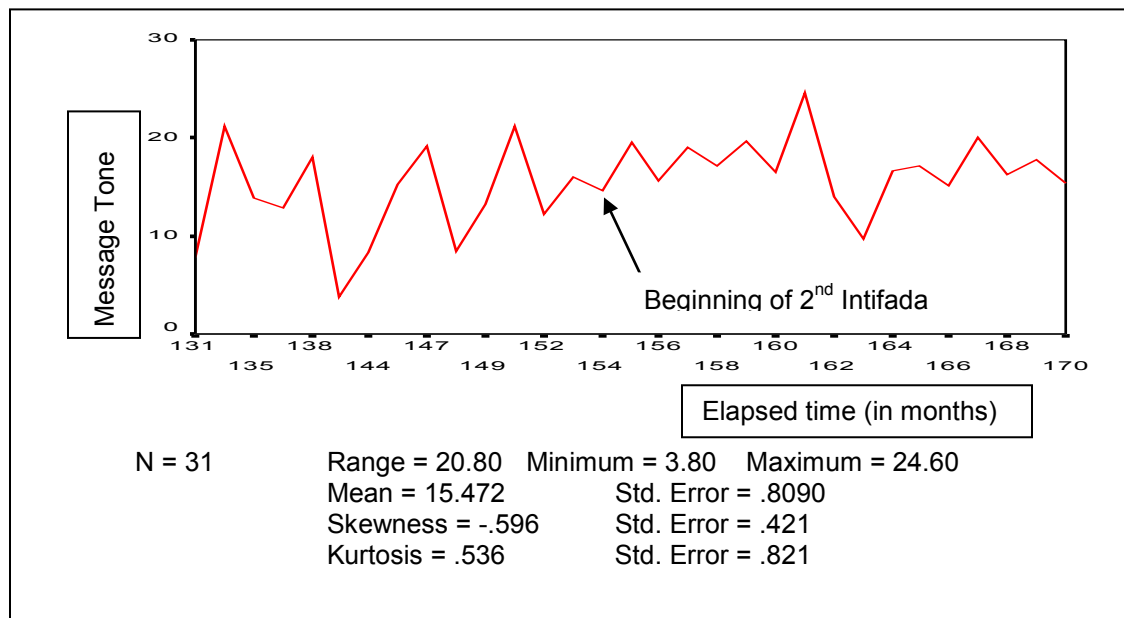
An increase in aggressive content would be expected given the escalation in violence in Gaza, the West Bank, and Israel proper. Themes of glory also increase in conjunction with escalation in fighting, and this would be an expected outcome given Hamas' appeal to themes of martyrdom in the struggle to liberate Palestine. The RAF, on the other hand, found itself increasingly pressured by authorities and the public more and more after 1971 (ending in month 25). The group's widely divergent emphasis on both aggressive themes and referents to glory suggest a highly complex and variable operational environment and shifting perspectives of newly emergent

leaders. The SLA also found itself increasingly pressured over its short life, and the group's diminishing emphasis on themes of aggression could be expected of an organization struggling to win a modicum of support. Glory-related themes, however, never played much of a role in SLA communications, and the steady consistency, albeit low, of glory-themed content in SLA communications reflects this tendency.

Figure 4:   Red Army Faction Message Tone Over Time (elapsed)
Source: Author's construction

N = 51	Range = 23.10 Minimum = 2.60 Maximum = 25.70
	Mean = 13.0647 Std. Error = .7248
	Skewness = .338 Std. Error = .333
	Kurtosis = -.482 Std. Error = .656
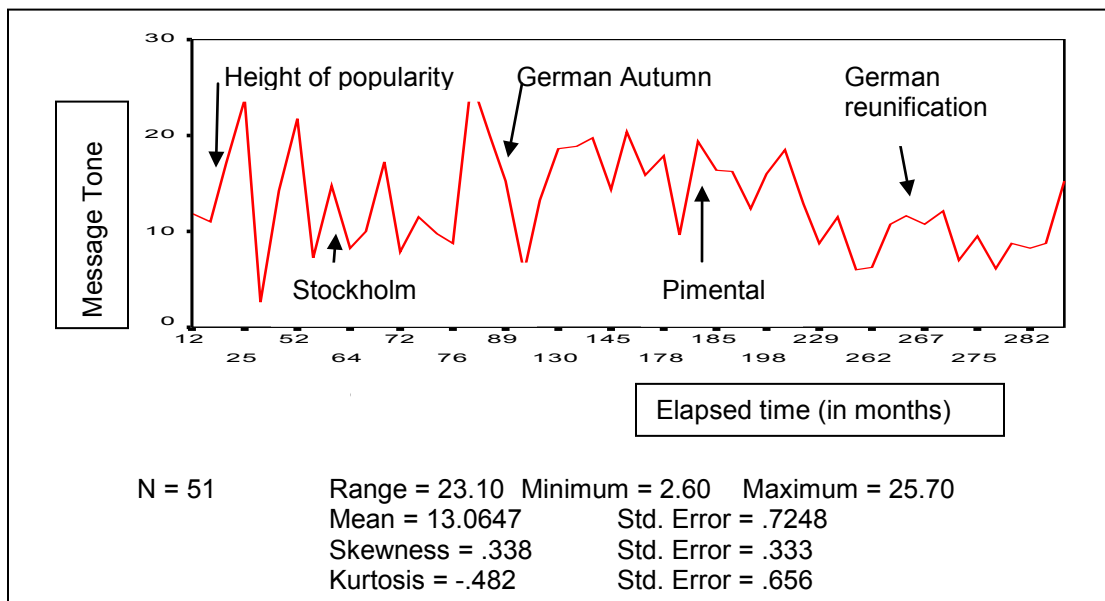
Figure 5:   Symbionese Liberation Army Message Tone
Over Time (elapsed)
Source: Author's construction

N=9	Range = 22.20 Minimu
	Mean = 12.2778 Std. Error = 2.3272
	Skewness = -.475 Std. Error = .717
	Kurtosis = -.355 Std. Error = 1.400

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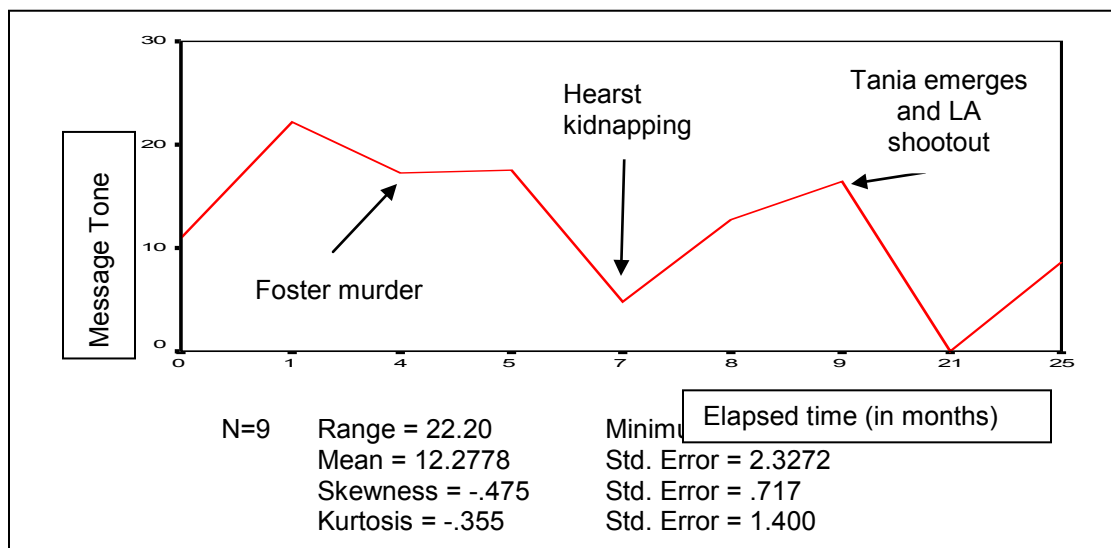
General trends are also indicated by calculated skewness and kurtosis figures. Skewness, or the degree to which measures are found to be bunched on one side of a central tendency or the other, in these cases may suggest variations in emphasis of certain themes as a function of time. For Hamas and the SLA, skewness in message tone is negative, -.596 and -.475 respectively, indicating a slightly greater distribution of observed measures fall to the right of the central tendency, suggesting a slightly greater frequency of aggressive or glory-related word occurrences in messages than might be otherwise expected by chance. For Hamas, skewness thus suggests an increased favoring of aggressive or glory-related wording over time. The general tone of SLA messages decreases over time, in contrast to those of Hamas, suggesting a disproportional emphasis on such wording in later texts. Skewness for the RAF is positive, indicating a positive skew where more frequent aggressive and glory-related word use is found in earlier texts than in those disseminated later in the organization's lifetime. Kurtosis is an indication of the extent to which a distribution deviates from the normal random-distribution Bell curve. Hamas texts exhibit a leptokurtic distribution, where a graph of the distribution would exhibit a sharper than normal peak in distribution, suggesting a greater degree of consistency in message themes. The kurtosis scores for both the RAF and SLA, however, are negative, indicating a platykurtic distribution, or a lower and flatter distribution curve than normal. This suggests a greater degree of message tone variability for the RAF and SLA, consistent with the greater heterogeneity of their targeted audiences.

Link Specific Assessments

In terms of the situational theory of publics and expected link affinity, the differences between Hamas, the RAF, and the SLA become a bit harder to assess for want of an already validated metric with which to measure the strength and resiliency of ties between network nodes. Each organization operated in a unique environment, with varying levels of freedom of movement, different mechanisms for the dissemination and diffusion of knowledge and opinion, different cultural and social norms, and vast differences in spatial diffusion of the targeted audiences. The role of religion, both for members of the subject organization and for members of their targeted audience also plays a significant role in network and network dynamic uniqueness. Hamas' calls to action, for example, depend heavily on a claimed religious mandate that, arguably, had no counterpart in late 20th Century Germany or the United States. In both the RAF's and SLA's milieu, individuals are generally considered free to make whatever choices each deems best given his or her goals and perspectives. In Hamas' milieu, however, Islam provides a pervasive and at times overriding behavioral framework that has a deep-rooted affect on individual decision-making. While the expected affinity metric is designed in part to help overcome such environmental differences, it can neither eliminate nor anticipate all possible determinants and influences on human agency. It can, however, offer some insights into the ways audiences might be effectively approached and persuaded.
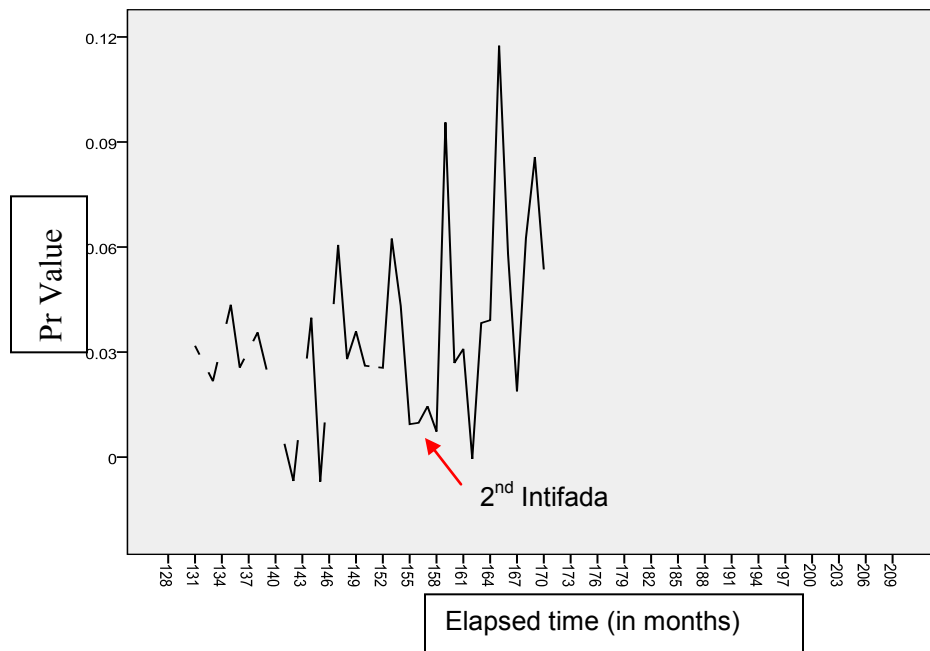
Problem Recognition

Convincing an audience that a problem is sufficiently grave to warrant attention cannot be guaranteed regardless of any pre-existing audience concerns. Not

only must a potential audience recognize the existence of a problem and its gravity, it must also recognize it as one that can be solved. That audience must also come to see it as something needing their personal attention. For Hamas, the campaign against Israeli occupation of Palestine and Gaza is easy to acknowledge and leverage. Convincing a Western audience that the state and the bourgeoisie continue to oppress the proletariat, or that the relatively well-off Western middle class needs to be concerned about revolutionary movements halfway around the world, is quite a bit more problematic.

Among Palestinians, Israel's occupation has been a conflict point since the 1940's, making problem recognition for Hamas one of reinforcing prevailing sentiment rather than identification and promotion of a new cause for concern. Finding common cause with its intended constituency, thus, is a simple matter for Hamas leaders. The shifts of message content focused on recognizing existing problems reflect the ease with which Hamas can leverage Palestinian frustration, anger, and discontent (Figure 6a). Hamas need expend little effort in its messages to convince its audience that Israeli actions are detrimental to Palestinians and their aspirations. Months 134 (January 1999) through 149 (April 2000) correspond to a period in which Hamas continued attacks against Israel, but outside of the expectations of many Palestinians who continued to invest faith in the Oslo Accords. The spike in month 153 (August 2000) reflects increased Palestinian frustration, and activity, immediately preceding the beginning of the 2nd Intifada, reflecting growing Palestinian disenchantment with the prospects for peace. Israeli Prime Minister

Sharon's September 2000 walk at the Temple Mount brought Palestinian anger to the forefront once again, effectively highlighting Hamas' principal

Figure 6a: Hamas Problem Recognition Over Time
Source: Author's construction

complaint. Subsequent months show a striking increase in problem recognition language in Hamas messages, as Hamas worked to ensure the Palestinian people placed anger about Israeli occupation and actions atop their daily concerns.

Using the Regressive Imagery Dictionary to assess the same messages, however, offers a different portrait of Hamas communications (Figure 6b), although this does not suggest a discrepancy between the two measures. Using the RID *abstraction* and *restraint* measures to reflect problem or issue identification in Hamas' messages shows a strong emphasis on both in the 20 months (February 1999, month 135, to September 2000, month 154) leading up to the 2nd Intifada. In the interim period between the 1st and 2nd Intifadas, Hamas messages emphasized abstract

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concepts, such as Palestinian rights, in an effort to keep the relevant issues in the forefront of intra-Palestinian dialogue. A number of Hamas communications during this time addressed political and cultural aspirations and reflected, most often negatively, on the Oslo Accords and the efforts of

Figure 6b: Hamas Message Abstraction and Restraint Over Time
Source: Author's construction
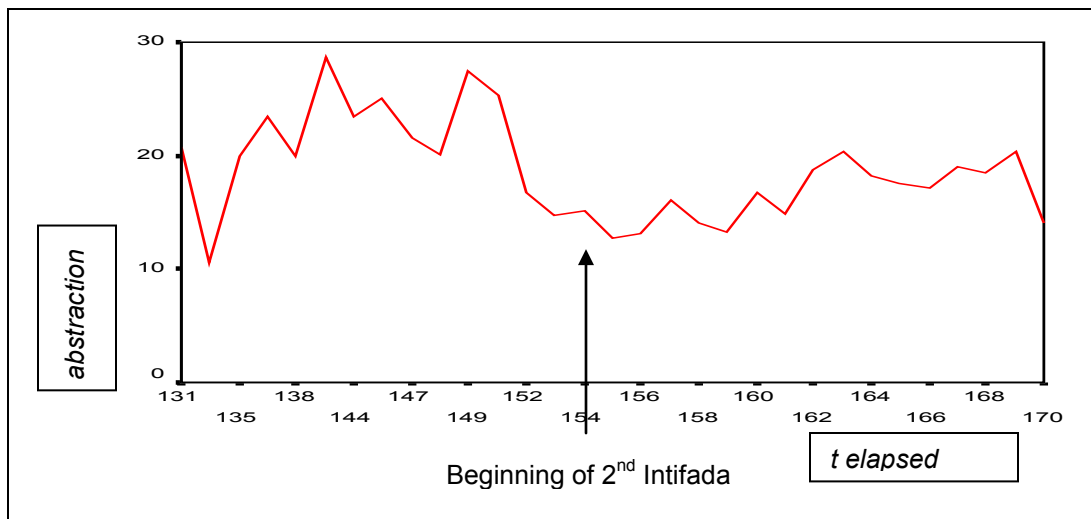
other Palestinian groups such as the PLO and Fatah to find a negotiated settlement with Israel. Increasing tensions within the Palestinian community in the months leading to September 2000 may explain the downward turn of emphasis on abstractions and restraints as Hamas sought to derail the Accords.

The RAF's message history shows a much flatter evolutionary trajectory, with the notable exceptions of a few significant spikes. Less emphasis in problem recognition (Figure 7a) may have been the result of ideological stuntedness on the part of RAF leaders. Angry and frustrated over what they saw as continuing Nazi influence among German government, security, and business leaders, the RAF may have believed their reading of German government and society were shared by their

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presumed constituency. RAF communiqués could be quite self-centered, focusing on their complaints and dislikes without effectively connecting to either the desires or aspirations of those they claimed to speak for in German society. Following its emergence in the late 1960's and early 1970's, the RAF enjoyed a brief period of

Figure 7a: RAF Problem Recognition Over Time
Source: Author's construction
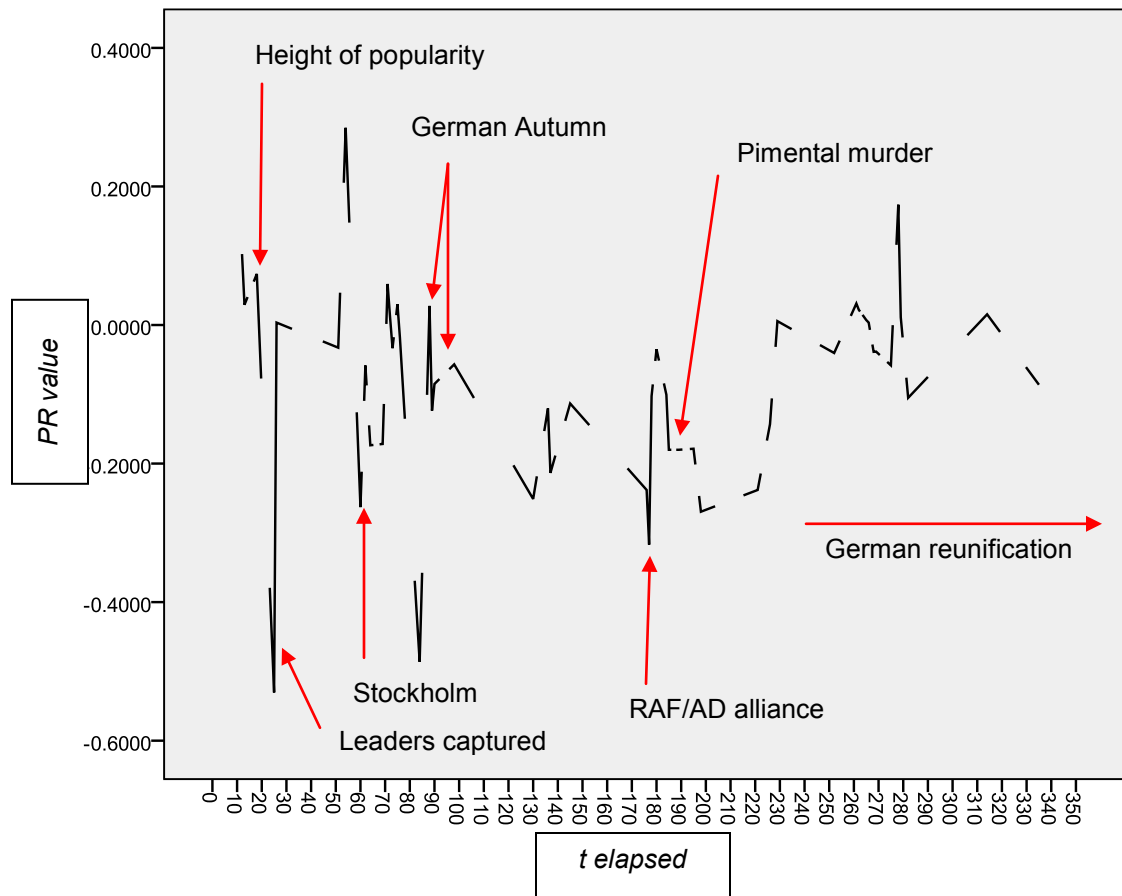
relatively widespread support, at least among German students and worker groups. The banditry of the early RAF helped create something of a "Robin Hood" image for the group, yet continued violence soon eroded much of its support. In and around October 1971 (months 15 to 24), the group was perhaps at the height of its popularity

and its message at this time tended to capitalize on public interest, promoting its

perspective of pressing problems in part to distinguish itself from other German

militant groups.

In 1972, violence by the RAF and other German terrorists began to take a toll

on their popularity, leading to the German state's response to public demands for

order by adopting the *Berufsverbot* laws, denying apprehended militants easy access

to militant legal counsel. German police effectiveness also increased in this period,

culminating in the arrests of RAF leaders Andreas Baader, Gudrun Ensslin, Ulrike

Meinhof, Holger Meins, and Jan-Carl Raspe in June 1972 (month 26). The period

following the arrests of RAF founders was dominated by their continued trials and

tribulations in prison, leading to a spasm of violence in April 1975 (month 60) and the

fall of 1977 (roughly months 87 to 92). By April 1975, the RAF had absorbed another

German militant group, the Socialist Patients' Collective,[62] whose members formed

the core of the RAF team that seized the German Embassy in Stockholm, Sweden,

and executed a German attaché during that action. The fall of 1977, called the

"German Autumn," saw another spasm of RAF violence, including the assassination

of Dresdener Bank President Jürgen Ponto, the kidnapping and subsequent execution

of German Employers' Organization chairman Hanns-Martin Schleyer, and the prison

suicides of Baader, Ensslin, and Raspe.

The third generation of RAF leaders emerged in the late 1970's and early

1980's, followed by a final spasm of RAF violence. The RAF's murder of a U.S.

Army soldier, Edward Pimental, simply to obtain his identification card, turned public

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[62] This group was begun by Dr. Wolfgang Huber at Heidelberg University from among his psychiatric patients. Huber claimed his patients' ills were caused by capitalist society and the only cure was through Marxist revolution.

sympathy and support away from the RAF. Other German radicals condemned

Pimental's murder as excessive (Arm the Spirit 1994) and unnecessary. The collapse

of the Soviet Union, the dismantling of the Berlin Wall, and the reunification of

Germany put additional pressure on the RAF, eventually leading its leaders to

conclude revolution could not be achieved in Germany in the foreseeable future.

Despite the level of support the group enjoyed at various times, RAF leaders chose

either to ignore public sentiments or to dismiss them as uneducated or erroneous.

Following the Pimental murder, for example, the RAF responded to criticisms not by

acknowledging errors or disagreements, but by admitting to making mistakes in

releasing a second communiqué to an unenlightened audience.[63]

Assessing the same series of messages using the Regressive Imagery

Dictionary shows a fair degree of overall consistency over time, albeit with

significant highs and lows throughout the organization's lifespan (Figure 7b). This

chaotic consistency may be due in large part to the nature of RAF messages, which

frequently made liberal use of both abstract and concrete concepts, intimately tying

and sometimes confusing ideology and actions.

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[63] Arm the Spirit 1994: 8-9. In fact, the RAF response was rather arrogant, noting, "it was certainly a mistake to send this second communiqué and the ID card together. We presumed that those who understood the action would make the connection." When asked about the differences between Pimental's death and the deaths of two others on the American airbase in Frankfurt, accessed through use of Pimental's ID card, the RAF responded by saying "the relationship between us [the RAF] and them [the U.S. military] is war. We needed his card, otherwise we could not have accomplished the attack. Of course, we wouldn't say we should now shoot every GI who comes around the corner or that other comrades should do so. One can clarify this only by considering the actual situation, the political-practical determination of the attack, i.e., it is a tactical question." Follow-on communications by the RAF added, "Naturally, we have, as a result of our mistake, that is not making it politically clearer how we understood the attack and our silence about the GI, which prevented people from knowing it was a counter-action, made the discussion very difficult and triggered debates that are not, in themselves, relevant."

Figure 7b: RAF Message Abstraction and Restraint Over Time
Source: Author's construction
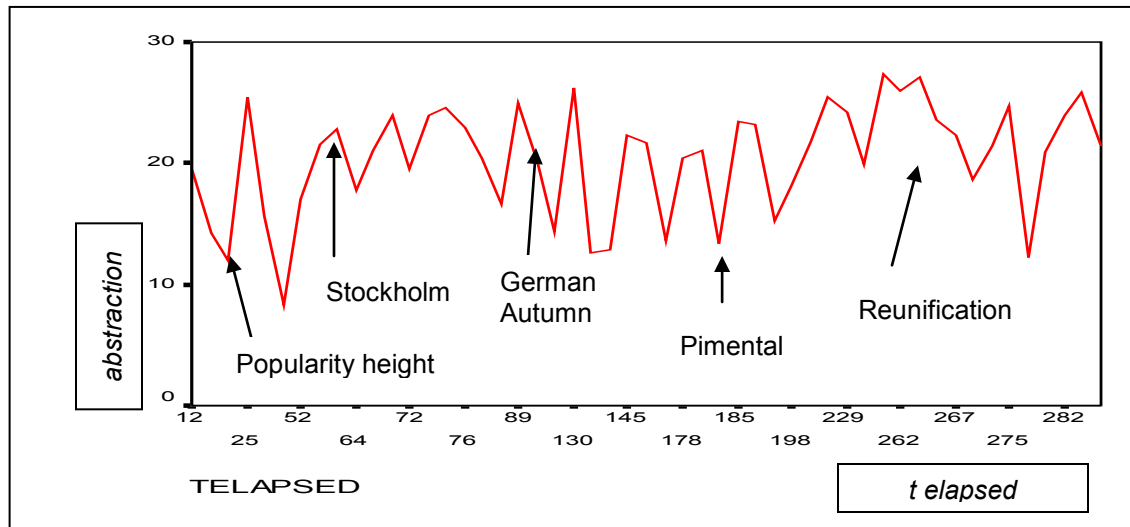
emphasize many of the same concerns, although at times in the form of angry rants

and insulting labeling and in others as grandiose claims to status and legitimacy. A

graph of problem recognition language over time (Figure 8a) clearly illustrates the

growth, then rapid decline, in SLA efforts to convince an audience that the problems

it identified are sufficiently important to garner support.

Assessing SLA messages using the Regressive Imagery Dictionary offers

additional insights into SLA communications (Figure 8b). In November and

December 1973 (months 4 and 5), the group sought to explain its rationale for the

murder of popular San Francisco Schools Superintendent Marcus Foster. Foster was

called a fascist by the SLA, and was killed because, according to the group, he sought

to impose a police plan to issue identification cards to students. In February 1974

(month 7), the SLA kidnapped Hearst, leading to repeated explanations of how its

actions were necessary to advance the revolution. By April 1974 (month 9), Hearst

had either been brainwashed or co-opted, emerging as "Tania" in the Hibernia Bank

robbery in San Francisco. The shootout between most of the SLA and Los Angeles police, on live television, not only significantly reduced the group's membership, but also corresponded to a final precipitous decline in communicative efforts to build agreement with a public on the nature of problems needing action-oriented solutions.

Figure 8a: SLA Problem Recognition Over Time
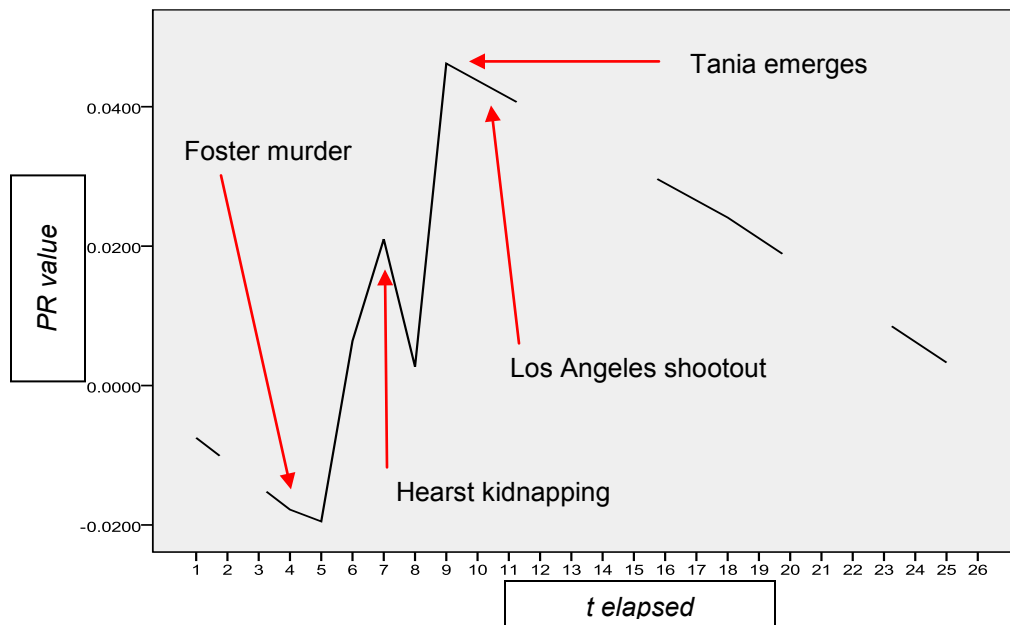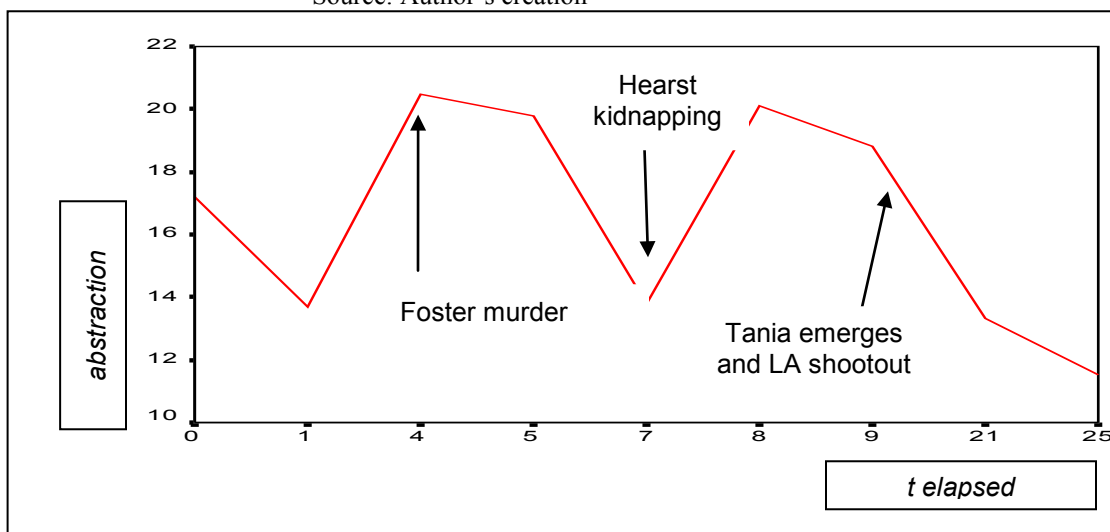Source: Author's construction

Figure 8b: SLA Message Abstraction and Restraint Over Time
Source: Author's creation

Level of Involvement

To successfully gain and maintain a supportive audience, a terrorist group must also convey a sense of importance of the issues and problems identified such that message recipients would likely agree that the issue is important enough to warrant their personal contribution to resolution efforts. These types of appeals can take the form of abstract concepts, tying issues to ideals, or concrete goals and aspirations where level of involvement is couched in terms of specific actions or goals to undertake and support. As such, variability should be expected in assessments of group communications, reflective of the flexibility with which this aspect of persuasive efforts can be affected. For Hamas, level of involvement measures exhibit stark differences, depending on which dictionary is used to make the assessment.

Using the dictionary specifically developed to generate measures of expected link affinity (Figure 9a), Hamas messages show slow but steady increases in involvement references up to the beginning of the 2nd Intifada in September 2000. This may reflect the impact of the Oslo Accords on Palestinian discourse, where involvement was largely confined to the actions and agency of states. Beginning in September 2000, however, the sphere for potential action shifted back to the personal level, giving Hamas additional opportunities to emphasize the potential benefits of personal involvement in countering Israeli occupation. Assessing the same communications with the Regressive Imagery Dictionary (Figure 9b), on the other hand, shows considerable variation over time, with little if any correspondence

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between expressed levels of abstraction and restraint and activities in Palestinian or Israeli lands. This lack of correspondence and persistent variability may reflect the ease at which abstract and concrete concepts can be used to address involvement issues.

Figure 9a: Hamas Level of Involvement Messaging Over Time
Source: Author's construction
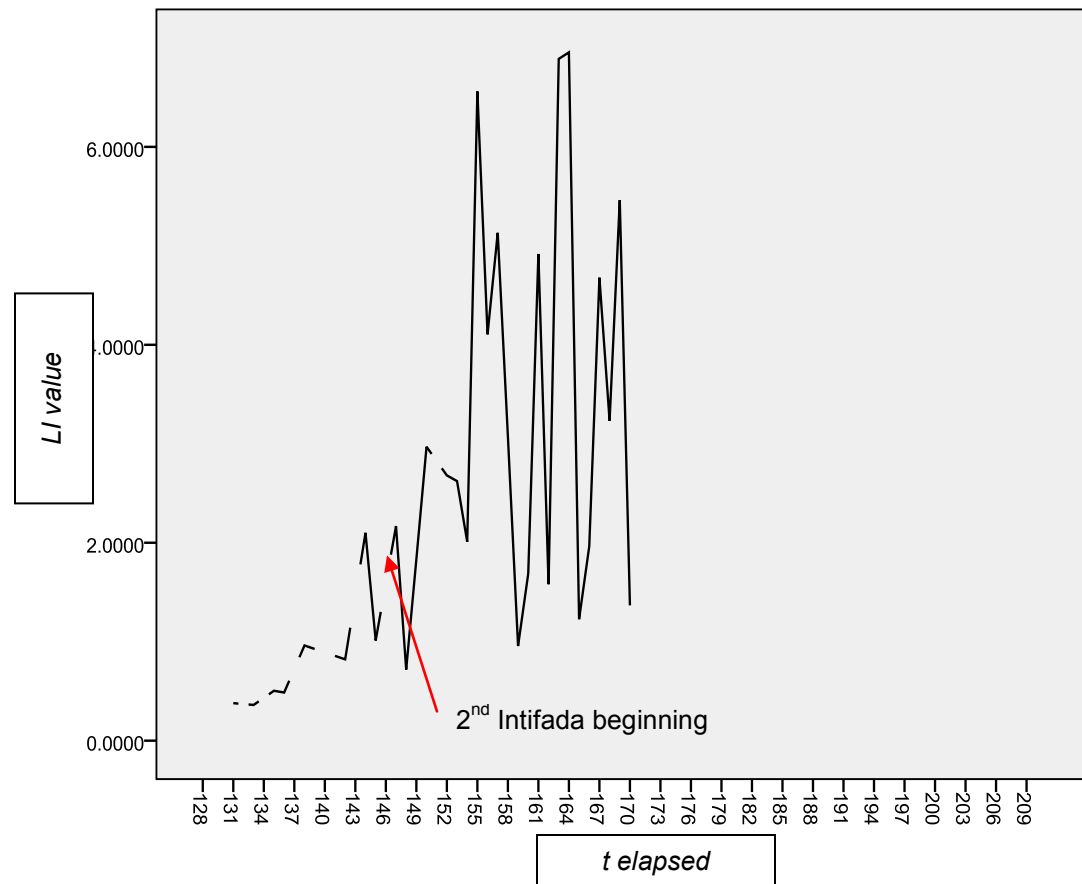
RAF communications show greater correspondence between assessments using different dictionaries. Using the expected link affinity dictionary, RAF messages exhibit considerable variations over time (Figure 10a), showing peaks in level of involvement phrasing roughly corresponding to periods of lessened

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Figure 9b: Hamas Message Morality and Social Behavior References
             Over Time
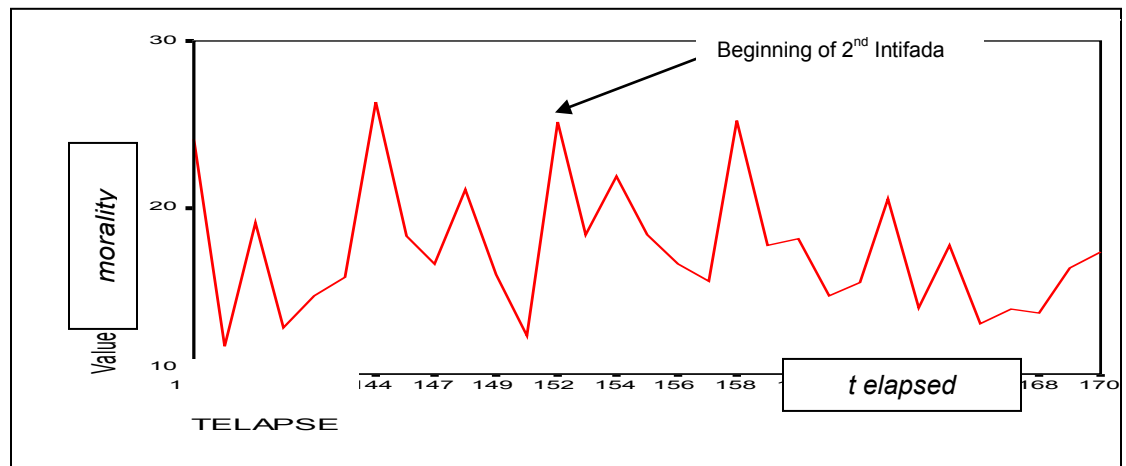   Source: Author's construction

Figure 10a: RAF Level of Involvement Messaging Over Time
              Source: Author's construction
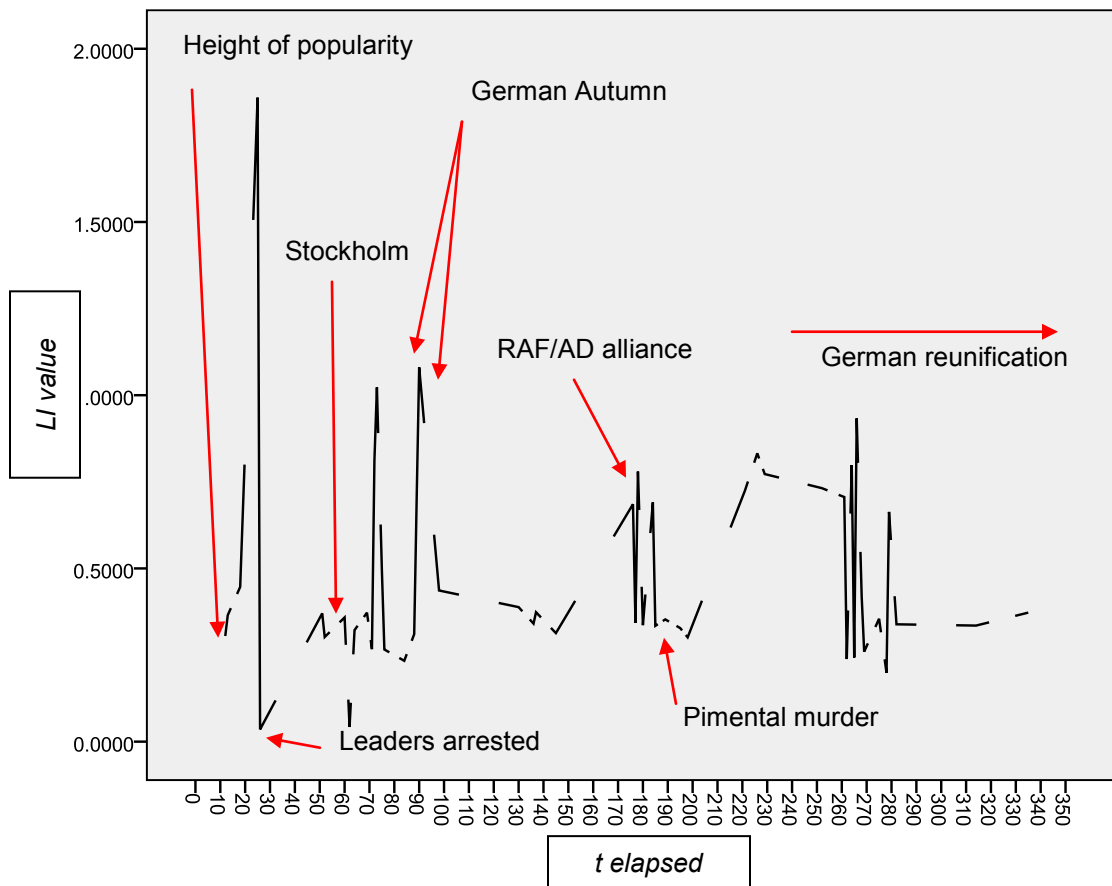
organizational activity. This may indicate a slight shift in messaging emphasis based in part of the organization's own operational capabilities. In periods where the RAF was more active, there appears to be less message emphasis geared toward promoting active support by outsiders. During those periods where RAF activity subsided, often as a result of German police counter- measures, messages seem to place greater emphasis on promotion of constituent activity and involvement. Results obtained using the Regressive Imagery Dictionary (Figure 10b) show less variation over time, but with a few notable shifts. Here, the largest single spike in frequency of moralist and behavior language corresponds to a period following the German Autumn of 1977, a time when the RAF's operational capability had been weakened.

Figure 10b: RAF Message Morality and Social Behavior References Over
               Time
               Source: Author's construction
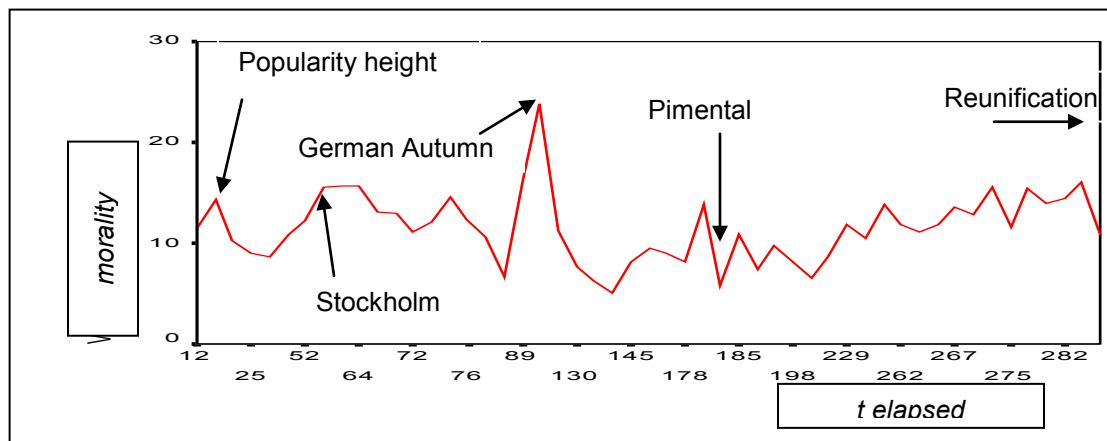
Level of involvement references in SLA messages also vary considerably over time, with graphic representations of results using the two dictionaries appearing almost as mirror images of each other. Assessed from the expected link affinity

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perspective (Figure 11a), SLA message references to level of involvement show peaks following significant operational activities undertaken at the group's initiative, most notably the Foster murder and the Hearst kidnapping. This could reflect the group's belief that action on their part would trigger and inspire action and support from among their presumed constituency, with messages crafted in a way intended to encourage recipients to join the revolutionary efforts of the SLA. Messaging trends reflecting level of involvement references exhibits sharp declines following significant activities initiated by the group's adversaries or which drew negative publicity, notably the shootout with Los Angeles police, suggesting the group retreated into something of a reevaluation period.

Figure 11a: SLA Level of Involvement Messaging Over Time
Source: Author's construction

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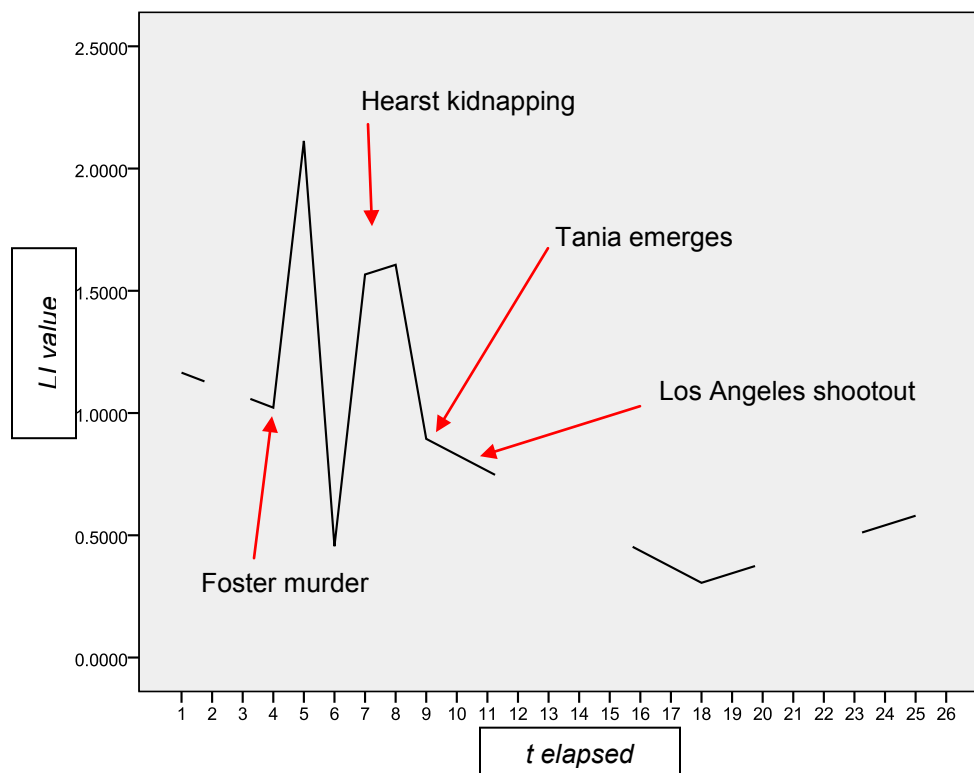
The Foster murder and the emergence of Hearst as Tania marked low points in morality and social behavioral references when messages were assessed using the Regressive Imagery Dictionary (Figure 11b). This may reflect a greater emphasis in messages on the group's own actions and a de-emphasis on justice or responsibility of the actions. Indeed, typical SLA communications sought to lay blame for violent action on the victims or the system the victims were said to represent, often either holding themselves blameless or arguing their violence was a necessary and inevitable consequence of government oppression.

Figure 11b: SLA Message Morality and Social Behavior References Over
                Time
                Source: Author's construction
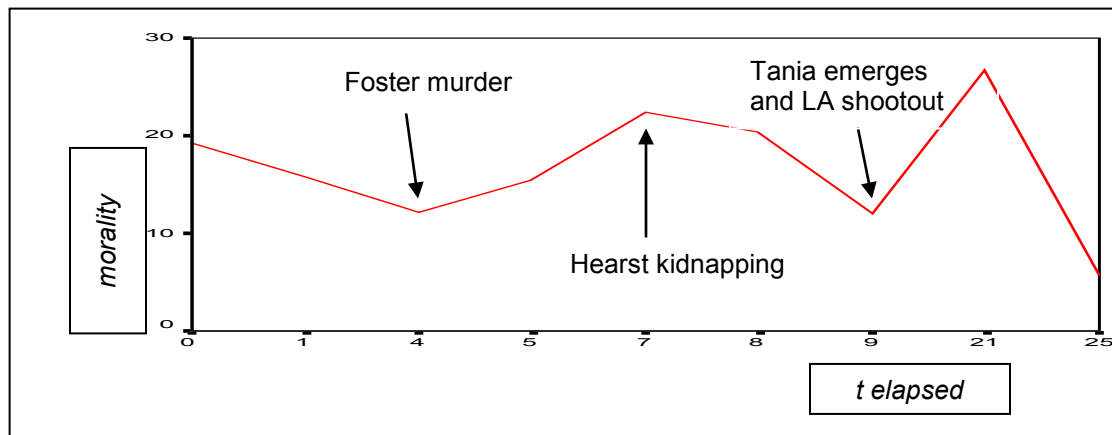
Constraint Recognition

Conveying or creating a shared perception of problems and inculcating a sense of individual action needs are not sufficient for generating and sustaining the kinds of support a terrorist group would need to evolve operational capabilities. They must also find a way to encourage their presumed constituency to accept or minimize

the perception of risk associated with action against the government. To do this, the group must find effective ways of convincing some portion of their audience that the potential benefits of supporting or acting on behalf of the terrorist outweigh the costs that may be associated with activity. More successful groups would be expected to include language in their messages acknowledging risk, but offering persuasive arguments for disregarding or minimizing those risks. Constraint recognition themes reflect this need.

For Hamas, environmental conditions in Gaza and the West Bank may mitigate the need for specific appeals to risk mitigation in their messaging. The conditions under which Palestinians live, particularly in Gaza, highlight for many the hopelessness of the Palestinian situation such that Hamas might find little need to emphasizing benefits of action or to minimize risk. Hamas messages in an expected affinity perspective (Figure 12a) reflect this, exhibiting a generally constant level of emphasis over time. After the beginning of the 2nd Intifada, when armed conflict between Hamas and Israel touched most Palestinians personally, emphasis on constraint recognition flattened even more than during earlier periods, although there are several periods in which Hamas relied more than previously on constraint recognition or mitigation language. The Regressive Imagery Dictionary (Figure 12b) offers a slightly different perspective, although one still characterized by little overall variation. There is, however, a sharp spike indicating much more extensive expressions of passivity and chaos in late 1998 and early 1999, and these may reflect perceived changes in communicative needs in response to optimism stemming from the Oslo Accords.

Figure 12a: Hamas Constraint Recognition Messaging Over Time
Source: Author's construction
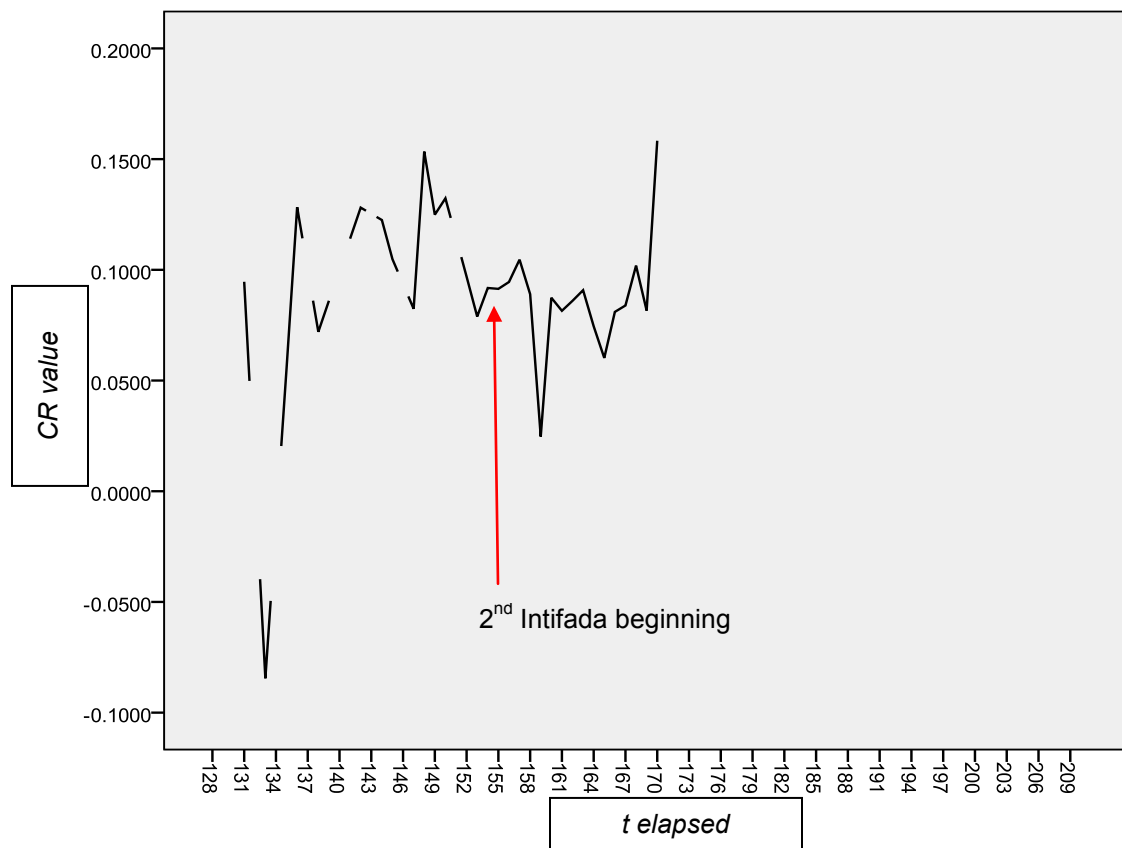
Messages disseminated by the RAF offer a somewhat confusing picture of the

group's inclusion of constraint recognition in its communications, although there

appears enough to suggest that the level of emphasis generally tracks with the ebb and

flow of the group's fortunes (Figure 13a). The high point for constraint-oriented

phrasing is found shortly after July 1971 (month 15), suggesting enjoyment of

increased popular support prompted a belief among RAF authors that little additional

persuasive effort directed at the public was needed. Other periods of increased

constraint-oriented wording is found in the months following enactment of the

Berufsverbot laws and capture of the group's founders in 1972, towards the end of the

Figure 12b: Hamas Message Passivity and Chaos References
               Over Time
               Source: Author's construction
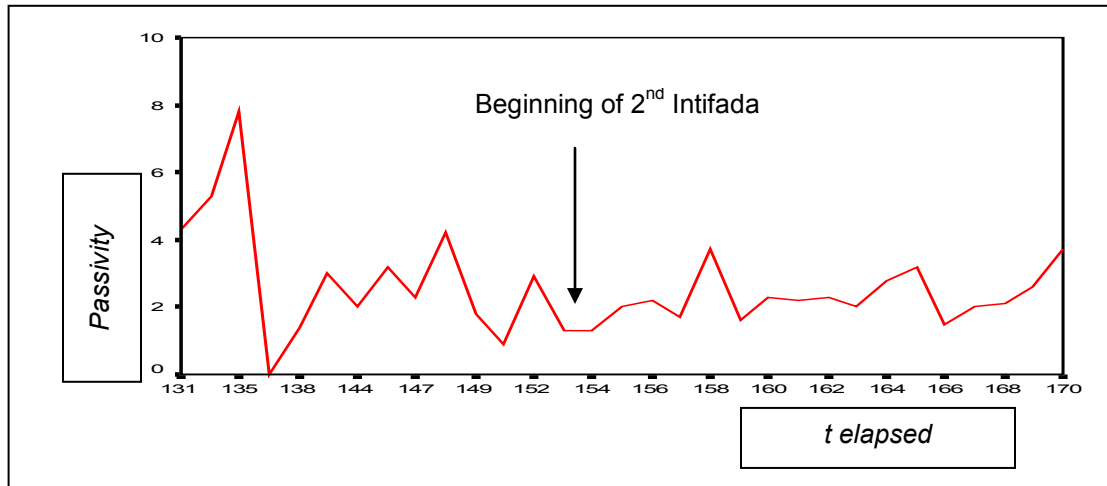
Stammheim trails of RAF first-generation leaders, in the months following the

German Autumn, during a period of increased anti-U.S. activity (including the

Pimental murder), and following progress in German reunification.

Using the Regressive Imagery Dictionary (Figure 13b), RAF messages exhibit

consistent levels of expression associated in the RID with either passivity or chaos.

Three notable increases appear, however, during significant periods in the

organization's history. The first sharp increase is found immediately after initiation of

a one of the first hunger strikes by prominent RAF inmates and immediately

preceding the death of hunger striking RAF leader Holger Meins in November 1974

(month 55). A second significant increase corresponds to the beginning of the

German Autumn and the final increases in 1990 and 1993 corresponding to periods of

stress associated with German reunification and the RAF's last major act of violence.

The pattern of passivity and chaos expressions in RAF communications is consistent

with the group's ideological arrogance, tempered only occasionally when external

pressures necessitate increased efforts to encourage public support and sympathy.

Figure 13a: RAF Constraint Recognition Messaging Over Time
Source: Author's construction

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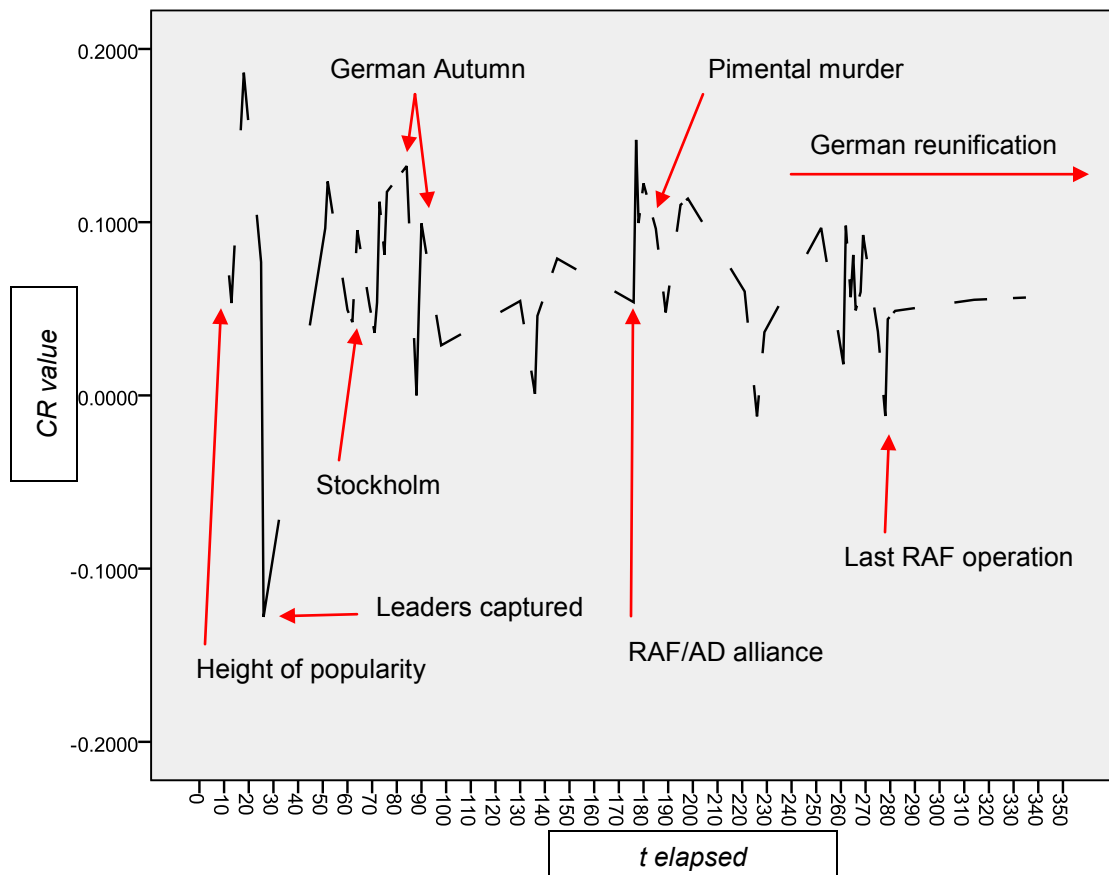
Figure 13b: RAF Message Passivity and Chaos References Over Time
Source: Author's construction
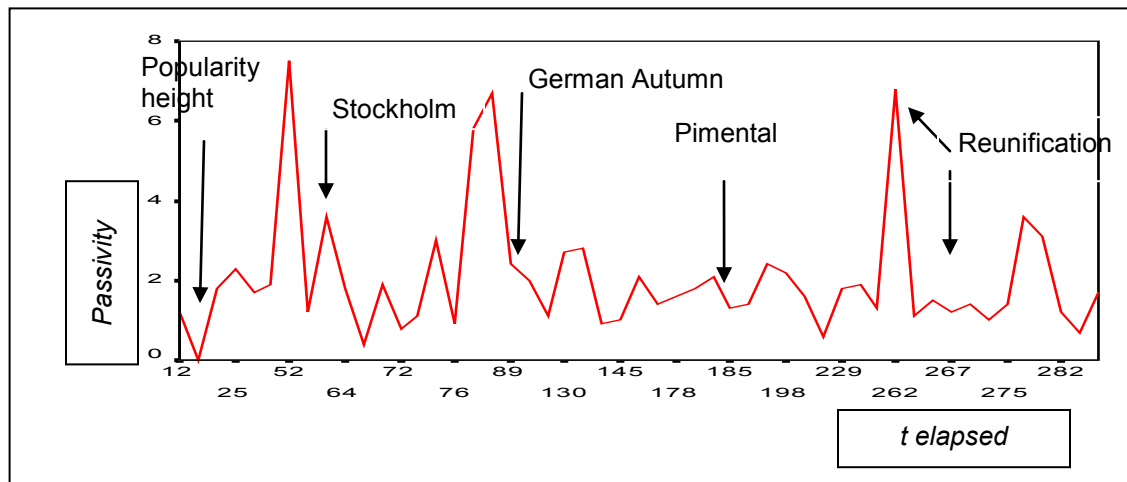
Assessments of SLA communiqués using the two dictionaries show remarkable consistency. Even more arrogant, perhaps, than the ideologues of the RAF, SLA leaders were quite dismissive of the public from the organization's founding. Rather than couching their struggle in terms of opposition to a state, government, or structure, the SLA made it quite clear that their opposition was to all who supported any part of the capitalist system. Their murder of Marcus Foster, for example, was explained as an action necessary to punish Foster for his supposed subservience to a police program designed to track minority youth.[64]

Constraint recognition content of SLA messages (Figure 14a) shows fair consistency for the first eight months of the organization's existence, spiking in December 1973, the month following the Foster murder. The SLA openly acknowledged that the original rationale for Hearst's kidnapping was to force local,

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[64] This is despite the fact that the school identification card initiative was originally Foster's idea and served as a compromise between those who wanted no such program and city leaders who wanted a more extensive program than that proposed. Foster was also quite popular with Oakland's Latino and clack citizens, a standing either lost on or ignored by the SLA.

state, and national media to publicize the group and its goals, perhaps offering an explanation for the relatively low level of emphasis placed on constraint recognition by the group. The more confident the group appeared to feel about themselves and their operations, the less they paid attention to constraint recognition. Levels of constraint recognition shifted sharply following the decimation of the group's leadership in May 1974, perhaps indicating a growing recognition that they had lost virtually all advantage and confidence they might have previously enjoyed. An examination using the Regressive Imagery Dictionary (Figure 14b) shows a quite similar pattern in message phrasing, albeit with a nearly one yearlong lag.

The frequency of occurrence found in phrasing indicative of passivity or chaos spikes in April 1975 (month 21) rather than in April 1974. This suggests that the second generation leaders of the SLA – those who emerged after the organization was decimated in the previous May's shootout in Los Angeles – had a different sense of the necessity for building rapport with an audience. These leaders spent the majority of their time trying to avoid capture, rather than attacking targets, further suggesting an increased emphasis on organizational survival.

A Situational Perspective

Looking at the messages of each group from a situational theory perspective offers a few opportunities for assessment based on observed differences. For Hamas messages, the overall tone and context of messages appears to have remained fairly constant over the time period assessed. A greater proportion of message content appears devoted to establishing and buttressing shared purposes of action. Second in importance in message themes appears to be expressions of hostility. While these

expressions are mainly directed against the Israelis, more than a few Hamas messages express hostility at both the Palestinian Authority and Arab states, mainly for their willingness to negotiate with Israel or for their actions hampering Hamas activities. Establishing and maintaining a shared sense of community seems to hold the least amount of attention in Hamas messages, perhaps because the organization's history and social welfare actions speak much more eloquently in this respect. Hamas, too, has little need to establish such a sense of community with its Palestinian audience, since that community is homogeneous and rather robust.

Figure 14a: SLA Constraint Recognition Messaging Over Time
Source: Author's construction

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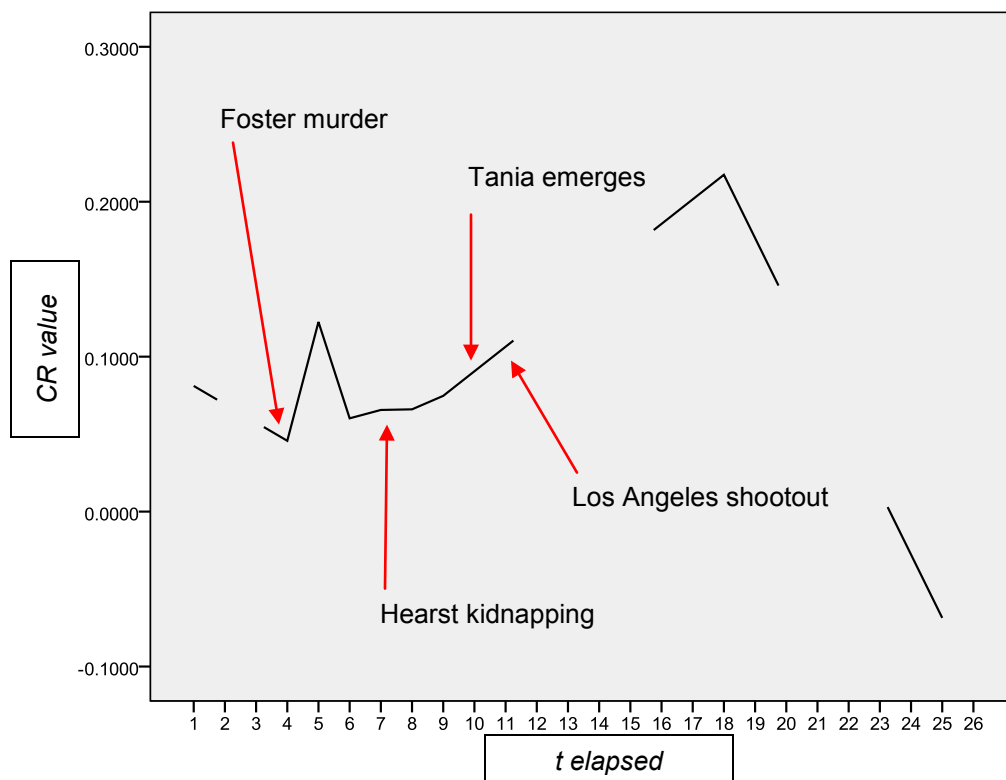
Figure 14b: SLA Message Passivity and Chaos References Over Time
Source: Author's construction
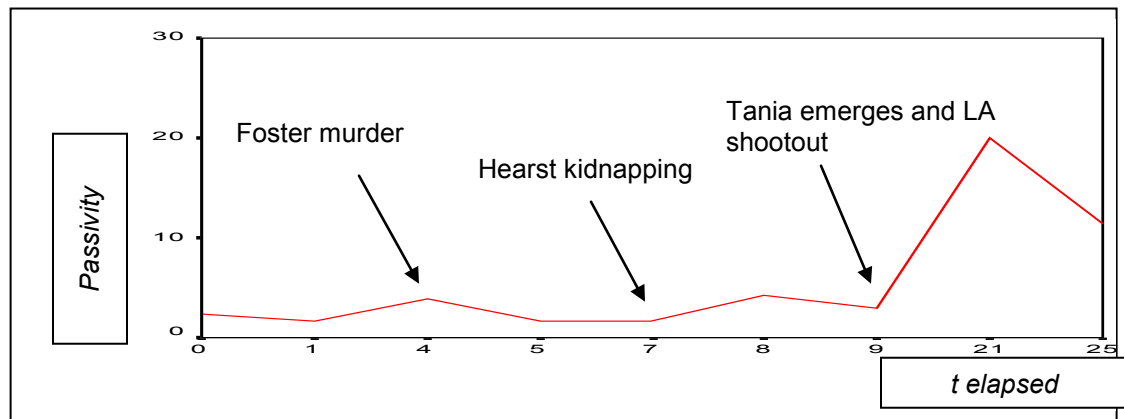
The Red Army Faction's messages suggest a different set of messaging

priorities. Since its founding, the RAF has exhibited a certain contempt for the public,

seeing ordinary Germans as deluded by the capitalist system and ignorant of the

implications of their leader's ties to the Nazi regime. Given their hatred of Germany's

recent political path, RAF leaders felt obligated to reveal the German state as a

creature of the Nazi regime and to educate the workers, students, and other

"progressives" of German society on the necessity of Marxist revolution. The RAF's

messages, consequently, express considerable contempt, even for their presumed

constituency, and convey a sense of pontification rather than persuasion. Efforts to

build a shared community are present, but limited in that they tend to be directed

primarily at the German left. Apparently assuming common cause and perception

with their audience, primary emphasis rests in expressed anger at the German state,

the capitalist system, and, later in the organization's life, the United States and

NATO. Lesser emphasis appears given to community building or to constraint

recognition.

The SLA offers yet another sense of importance through its messages. In its early days, much of the SLA's textual efforts were spent establishing and defining purpose as the group sought to establish a rationale for its operational existence. This effort appears tempered, however, by an ideological arrogance that assumed problem awareness would lead naturally to acceptance of the SLA's perspectives and goals. In much the same way, secondary importance appears given in the early days to establishing and maintaining a community among the San Francisco-area radical left, although much less so with the Bay-area general public. Expressions of hostility are a hallmark of SLA messages, mostly directed at the "system" and those who support it, although this varied most likely in response to external pressures on the group. As the desperation of the group grew, hostility and contempt gained prominence, and permanence, in the group's messages. In the final months of the organization's existence, purpose and community disappeared from the group' messages, reflecting well the group's final days spent grasping for a last opportunity to justify its past.

A Valid Comparison?

There are, quite evidently, limits to what can be derived from comparing assessments using two content dictionaries designed for different purposes. On the positive side, the comparison offers a clear sense that given the appropriate modeling of content analysis dictionaries, categories, and subcategories, differences in the communicative efforts of various terrorist groups can be highlighted and examined. Such work may, in turn, offer additional insights toward understanding the dynamics of group birth, evolution, maturity, and decline. The ability of a terrorist group to establish and maintain a constructive dialogue, however marginal, may be a critical

component for organizational longevity and operational effectiveness. Without the ability to replenish used or lost resources, especially membership, any terrorist group becomes more susceptible to the law enforcement and security efforts of its opponents. Without new members to replace those lost, the operational viability of the group will reach a maximum quickly, and can only decline from there. Injecting fresh members into the group's activities, however, offers the opportunity for continued renewal, and maintaining a supportive environment, however minimal or marginal, is vital to the group.

One way in which the efficacy of the measures might be assessed is by fitting an ordinary least squares regression curve to the available data. Comparing the resulting regression lines, particularly their slope, offers additional insights into how the message communications of each group comparing in relation to the efforts by others. Similarities and differences would point to variations in patterns of problem recognition, level of involvement, and constraint recognition message emphasis over time, helping place each group on hypothetical evolutionary ladder introduced in chapter 3. Results from an association of variance are quite soft, with almost all generated statistical measures falling short of statistical significance. While having very few significant statistical results limits interpretive value for the analysis of variation and curve fit efforts, the graphical results retain utility for gross comparisons.

While few of the results generated in curve fitting or analysis of variance were found to be at statistically significant levels, the slopes of the regression curves nevertheless offer a general sense of the level of emphasis afforded each in the

groups' communications over time. These tendencies can help in placing each group along the hypothetical evolutionary curve discussed in chapter three, providing a sense of where each group may be in terms of generating and maintaining enough of a supportive audience that it could be expected to evolve in the direction of greater fitness. This visual representation of evolutionary trajectory does not yet allow for an exact determination of relative fitness, evolutionary path, or evolutionary status at any given time. It does, however, offer a general indication of where each group may be in its evolutionary arc and provides an indication of the most likely direction it has taken over a given period. Thus, graphic visualization as applied here, creates opportunities to begin consideration of potential explanations of the mechanics of network growth and resiliency processes involved in each group's efforts to generate sympathy and support. At the same time, the visual representations allow for coarse-grained comparisons between widely divergent groups, each operating in a spatially and temporally unique environment, each targeting a uniquely identified target audience.

All three groups exhibited a positive regression slope when problem recognition is plotted against elapsed time (Figure 15). Hamas and the Red Army Faction offer the greatest slope, both at .001, although neither result is significant. The Symbionese Liberation Army slope is flat, at .000, also not at a significant level. Apparent differences in slope result from variations in scale along the elapsed time axis. These findings suggest all three organizations addressed problem recognition in their communications at relatively comparable rates, and generally in the direction needed to help generate sympathy and support. None of the three, however, showed

significant, sustained emphasis, or a significant increase over time, on problem

recognition, most likely for a variety of reasons. Similarly, little of the overall

variation observed in problem recognition emphasis is explained by elapsed time

alone, suggesting that other factors play a greater role in determining the extent to

which each group might emphasize problem recognition in its communications.

Figure 15:   Curve Estimation Comparison: Problem Recognition
Source: Author's construction
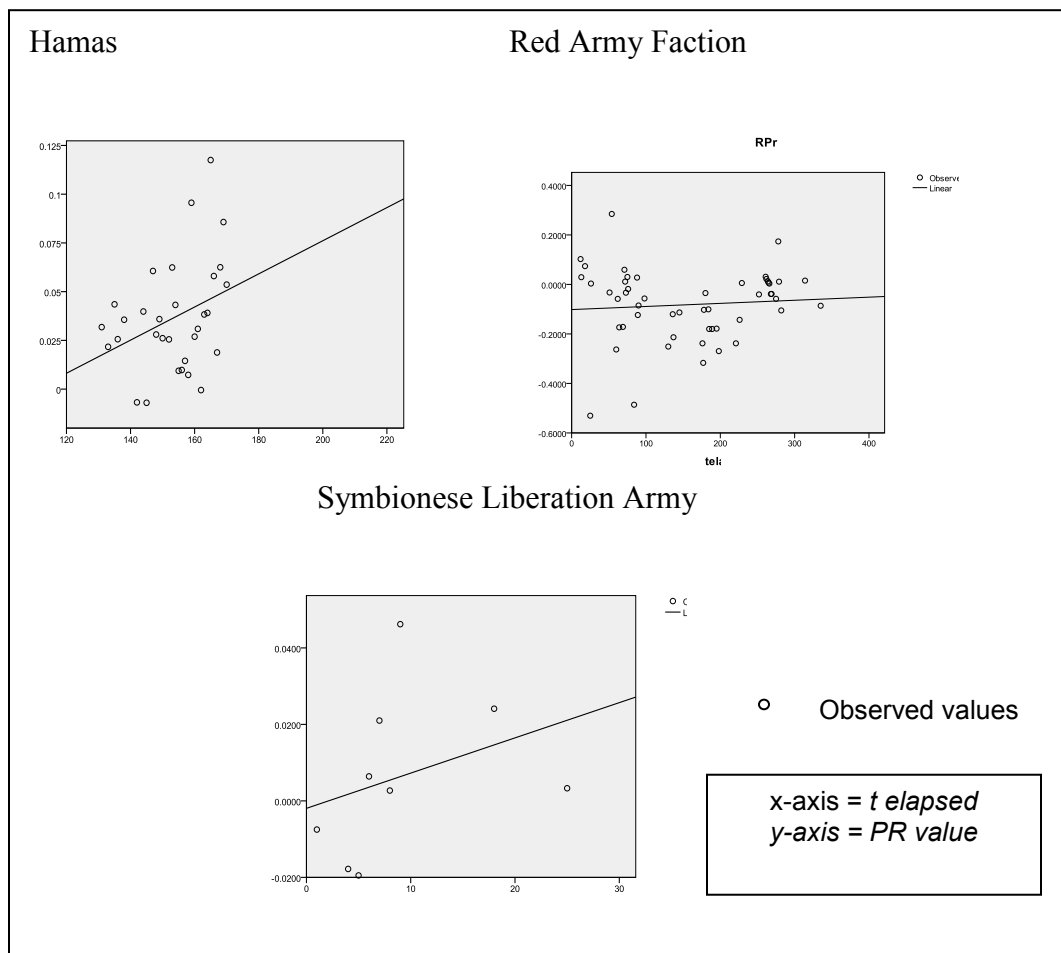
Plotting regression curves for level of influence over time (Figure 16) shows

some remarkable differences. For Hamas, the correlation coefficient, R, between

elapsed time and level of involvement emphasis in communications is 0.570, with an adjusted R^2 of 0.302. This suggests that roughly 30% of the observed variance in level of involvement may be explained by elapsed time, with variation not likely due to chance ($F = 13.968$, significant at the .001 level). The slope of the regression line is modest, 0.101, at a statistically significant level. This suggests that levels of involvement emphasis in Hamas communications can be tied in part to the passage of time, perhaps indicating a transitional period reflecting maturation of messages. It may also show that Hamas has succeeded in creating or leveraging a common perception of problem and has adapted its messages to leverage a shared sense of problems and begin building a common framework for action among its audience.

The RAF and SLA, on the other hand, show flat and negative regression curve slopes, respectively, neither of which appears at a statistically significant level. Variations in level of involvement emphasis for the RAF and the SLA cannot be explained well by the passage of time, indicating that for both observed changes in emphasis stemmed from other factors. The RAF's long-term trend appears to hold fairly steady, albeit with a very slight downward trend, suggesting perhaps either complacency towards prompting action or a failure to recognize the need for encouraging action in support of the group. The SLA seemed to grasp the importance of prompting action at its inception, but quickly took a more egocentric tone in its messages, perhaps explaining the downward trend in level of involvement emphasis.

Figure 16:   Curve Estimation Comparison: Level of Involvement
Source: Author's construction

Hamas

Red Army Faction

Symbionese Liberation Army

○   Observed values

x-axis = *t elapsed*
y-axis = LI values
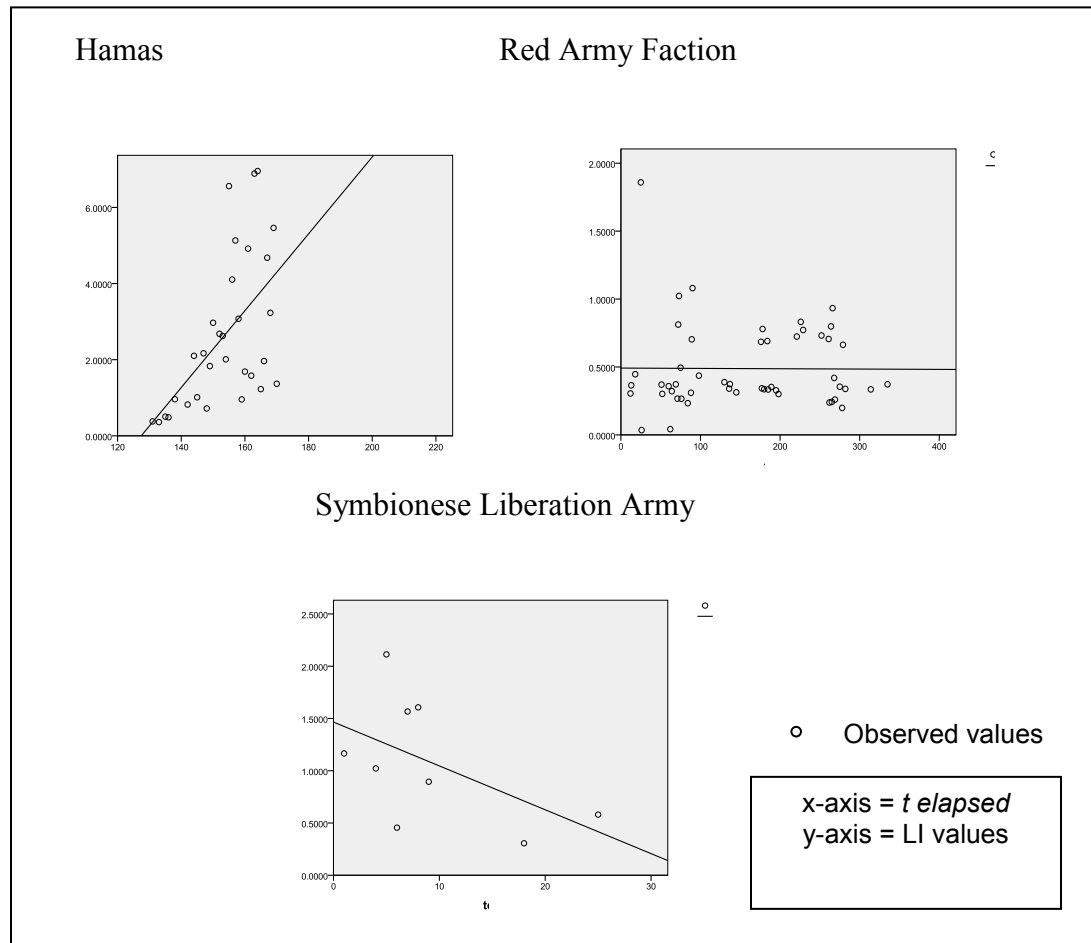
None of the three groups exhibited much emphasis on constraint recognition

(Figure 17), here defined in terms of acknowledging and accepting or mitigating risk

associated with action. Hamas exhibits a modest positive slope, suggesting that the

organization has tended to increase overall levels of constraint recognition in its

communications. This may be explained by a situational need to explain hardship,

particularly for Gazans under threat of Israeli military action, while building support

and a common agreement on activism. The RAF exhibits a downward slope over

time, suggesting a lesser emphasis on recognizing risk in later years, which may be

attributable to changes in group leadership, assumption of risk minimization

associated with the formation of strategic alliances with other European terrorist

Figure 17:   Curve Estimation Comparison: Constraint Recognition
Source: Author's construction

Hamas   Red Army Faction

Symbionese Liberation Army

Cr

○ Observed values

x-axis = *t elapsed*
y-axis = CR values
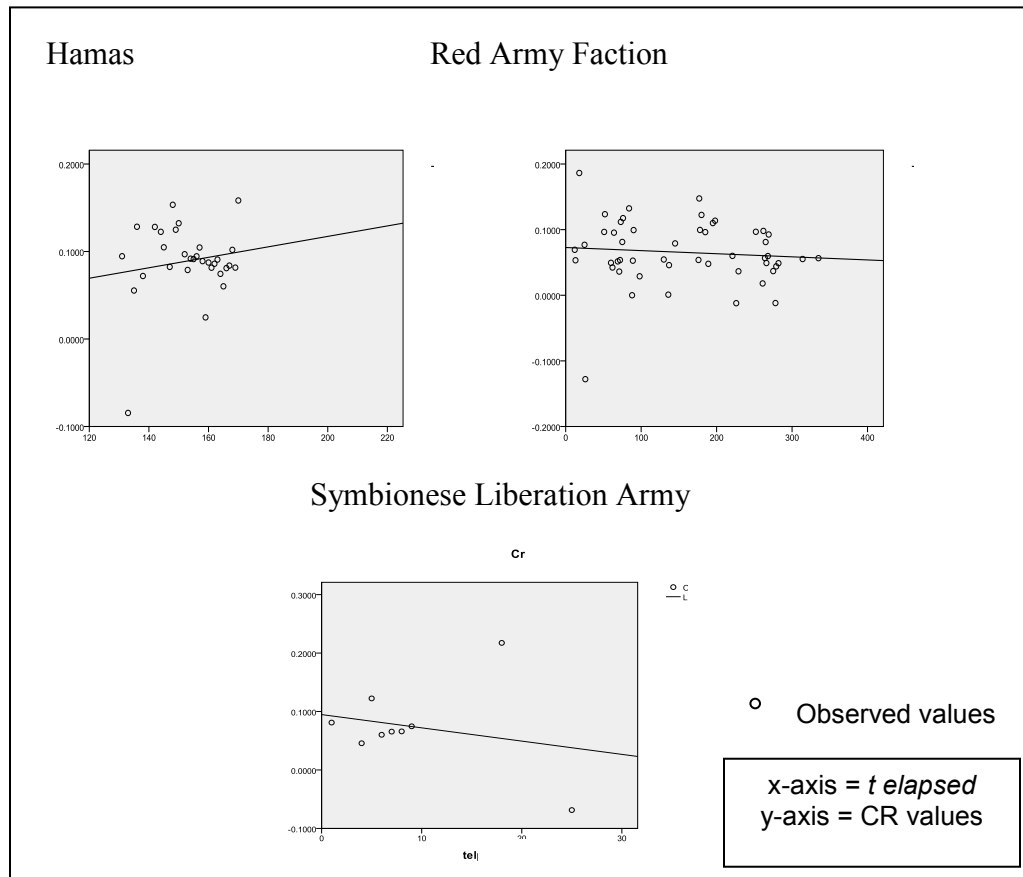
groups, or an ideological belief that prompting over-reaction by the state would

convey a suitable substitute message. The SLA offers an even sharper downward

slope, perhaps suggesting that the group was forced to react to increasing pressures

applied by not only state and federal authorities, but also desperation borne of a

mounting defensive perspective in the months following its loss of leadership in the

Los Angeles shootout. New members joining in the aftermath of that confrontation

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may also have been more idealistic or more committed to the cause than the first

generation leaders.

Other Considerations

The disparity in record size in this examination leads to important limits and

caveats. The SLA offers significantly fewer messages, of poorer quality, than do the

RAF and Hamas. While this may reflect the composition and capabilities of each

group's leadership, it also limits the generalizability of any results offered. Similarly,

the time spans covered for each group raise concerns. It might be more appropriate to

compare each across the whole of their respective organizational life spans, but at

present the lack of available Hamas communications from its earlier years makes

such a comparison problematic. Since these preliminary inquiries suggest there is

utility in further exploration, accessing the full range of organizational

communications becomes an immediate goal.

Finally, but certainly not least and certainly not indicative of the remaining

limitations to such research, is the notion that observed differences could be caused

by other casual factors. Once such factor could be the ideological underpinnings of

each group, but the extent to which that factor explains differences has not been

determined. Spatial limits and orientation, as well as nature of targeted audiences,

may also account for observed differences. Similarly, the purpose for which each

dictionary was developed surely account for some differences, with the expected link

affinity dictionary and the Regressive Imagery Dictionary testing different

manifestations of very complex perceptual, interpretive, and behavioral processes.

Equally important are questions associated with the appropriateness of the measuring

instruments used. Both the RID and the expected link affinity dictionary have clearly

defined purposes, but those purposes are not expressly compatible. The categories in

the RID used here are substitutes for more specifically focused content categories,

accounting in large part for the variations in results produced by each. The

fundamental tone and texture of the two sets of results so far suggest, however, that

enough result similarity and interpretive consistency exists to proceed with

development and refinement of the expected affinity metric.

Chapter 6: Expanding the Metric

If terrorist groups sought to gain and maintain a supportive audience simply by the power of their words, the persuasiveness of their communiqués and pronouncements, and the strength and justice contained within their goals and ideologies, they would be able to compete for status and standing on a legal basis, rather than resorting to extra-legal activities. Indeed, if this were the case, the competitive arena for the terrorist group would be quite different, the potential for reward greater, and the potential for risk and sanction much lower. Yet terrorists choose, for whatever reason, to engage in violent acts regardless of any existent opportunities for peaceful engagement.

The decisions to engage in violent acts, whether against the state, their non-state opponents, or some segment of the public, carry significant consequences for the terrorist. Choices of target, arms, and timing contribute to governmental decisions about counter-measures. Increasing the appearance of threat or escalation in attack frequency or severity inevitably lead to harsher counter-measures intended to preserve political and social stability. For some terrorists, prompting increasingly harsh and draconian counter-measures by government is the immediate goal, intended to show the public the "true nature" of the government (Marighella, 1970). Given an ideological affinity for the Uruguayan Tupamaros and the writings of Carlos Marighella, the Red Army Faction and the Symbionese Liberation Army both adopted an operational strategy designed to provoke government over-reaction. Hamas, too, has followed a similar path, with respect to Israel and the Palestinian Authority, although it has not expressed explicitly any ideological debt to Marighella.

Decisions to engage in violence also affect terrorist groups and their strategic development by shaping the nature of the group's relationship with the public and any segment of the public seen by the terrorist as a natural constituency. Terrorism affects not only its immediate victims and those closely related by familial, ethnic, cultural, social, economic, or political ties, but also a much wider circle of observers no matter how far spatially removed from the violence. Even where individuals are spared from the immediate effects of a terrorist attack, violent acts, particularly terrorist "spectaculars" that produce widespread damage and casualties, bring a degree of psychological damage to observers.

For terrorists claiming to act on behalf of a particular group, or constituency, violence can be a two-edged sword. On the one hand, violence directed at common enemies or their representatives can be seen as having a propitious effect on the terrorist – constituency relationship. Where violence is seen as benefitting a particular constituency, that portion of the population may be predisposed to approve of the terrorist's actions, leading perhaps to support and assistance to the terrorist. On the other hand, where violence harms the very people the terrorist claims to act for, little support or sympathy for the terrorist or his cause could be expected. Where the terrorist's acts and the goals, aspirations, and needs of his presumed constituency conflict, the terrorist may find little sympathy and may feel compelled to enforce compliance with his dictates through negative sanctions (Lichbach 1995; Bell 1998).

Winning popular support is a long-established precept in insurgency and counter-insurgency. Terrorists, too, understand the need for popular support, with very few terrorist groups utterly disregarding public sentiments. Those few that have

disregarded popular sentiments have tended to find their operational capabilities severely constrained, so much so that their ability to operate at all has been largely defined by the degree to which they can secure support and safe haven from a state.[65] Terrorists, particularly those whose ideology calls for the creation of a mass movement or popular revolution, seek the comfort and support of an audience larger than themselves and their active sympathizers. It is from this audience that they can expect to draw recruits, gain intelligence and information, find relative safety for rest and recuperation, and draw both ideological and material support.

The violence authored by a terrorist group affects their relationship with their audiences and constituencies in ways beyond the act of violence itself. Target selection, choice of weaponry, timing and frequency of attacks, location, and intensity of violence all convey meaning to observers. Attacks are designed to send a message, at least with respect to the selection of targets and timing of attacks (Drake 1998a). How the terrorist perceives this aspect of communications, however, varies widely. Some groups presume all observers can be expected to understand the message inherent in the act and eschew issuance of a claim of credit. Others are not so certain their intent and message will be immediately understood and choose to issue a claim of responsibility. Still others allow context and reaction to attacks to dictate whether to claim credit, indicating a degree of attentiveness to public opinion (Rapoport 1997; Pluchinsky 1997; and B. Hoffman 1997).

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[65] The Japanese Red Army, particularly after embracing the Palestinian struggle and attacking religious pilgrims at Israel's Lod Airport offer an instructive example. As the group became further marginalized from any identifiable constituency outside the Middle East, it found fewer opportunities for refuge, eventually becoming limited to safe haven in North Korea.

Less obvious, perhaps, is the way in which weapon selection and degree of discrimination in the application violence may have on understanding any intended message contained in the act. Targets are often selected for their representational value, their symbolic value, lending context to any act of violence. The Red Army Faction's kidnapping and subsequent execution of Hanns-Martin Schleyer, chairman of the German Employers' Association, made clear the RAF's opposition to the capitalist system's oppression of the proletariat. Similarly, Hamas' attacks on Israeli Defense Forces soldiers or on Israeli settlers make clear its opposition to Israel and Israel's presumed territorial expansionism. The weapon used in the attack, however, does not seem to hold the same communicative value as target selection, especially since many terrorist groups are somewhat constrained in their choices of weaponry by resource availability. Nevertheless, weapon choice may have an effect on observers' interpretations of the act, suggesting that the communicative impact of weapon choice may be easily skewed by misinterpretation. Similarly, less discrimination in limiting damage can be easily interpreted as indicative of actual group intent. Highly selective applications of violence, where a specific target is attacked in such a way as to limit collateral damage, may engender greater opportunities to attract neutral or favorable consideration of the act by observers. Highly indiscriminate acts, on the other, undertaken with complete disregard for collateral damage, can be seen as inherently more threatening since there may be no correspondence between one's role (or lack thereof) in a conflict and the likelihood of being a victim.

Symbolic Orientation

Intentionally or unintentionally, terrorist acts convey messages to a variety of audiences. The way in which those messages are interpreted by the terrorist's presumed constituency can have a significant impact on the extent to which the terrorist is able to generate support and sympathy for his cause and his actions. The symbolic orientation metric is intended to capture the potential communicative aspect of a violent act, intended or unintended, thus supplementing the rhetorical component found in statements and communiqués released by the group. The effect of persuasive efforts by the terrorist, designed to gain and maintain a degree of support, found in those texts can be supported or undermined by the acts themselves, making observer interpretations as important, if not more so, than the authors' intent. How acts of violence are interpreted, however, is not only highly sensitive to context, but also uniquely individualistic. There is no way of knowing how any group of observers interprets the acts of a terrorist group short of asking each individual in a given population how he or she understands the act. Even were mass surveys possible, the data derived is likely to change over time and in the presence or absence of repeated exposure to terrorist acts or terrorist sympathizers.

Developing a symbolic orientation metric, then, is highly subjective. Based on an expectation of impact and interpretation, it can only offer a sense of potential rather than a verifiable objective measure. Interpretation lies with the observer, not the author of the message, although the author can seek to direct and guide interpretations. Nothing, however, suggests that authorship necessarily engenders communicative intent, leaving any measure of effort to manipulate interpretation of

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symbolic content of acts presumptuous. Even in the absence of explicit intent, meaning is likely to be inferred by an audience, suggesting some value in considering the potential impact of symbolic meaning. Terrorism often seems purposeless, random, and unpredictable. To cope with the fear and uncertainty of terrorism, observers tend to attach meaning and purpose, however tenuous, to acts of terrorism in order to help assuage the psychological trauma of witnessing such violence. Symbolic orientation thus assumes interpretation of intent on the part of observers regardless of whether or not specific meaning was intended by the terrorist.

Severity, Intimacy, and Weapon Selection

Acts of terrorism are frequently judged on the basis of severity. The greater the degree of damage caused, the larger the casualty totals, and the degree of innocence attached to the target help shape popular reactions to acts of violence. One of the more common ways in which an act of terrorism is assessed is by the amount of kinetic energy released by the act itself, with greater amounts of kinetic energy released equated with greater destructiveness and severity. A knife attack releases little kinetic energy, limiting physical damage to a very small area. A single hand grenade releases much more energy on detonation, yielding a much wider, but still limited, destructive radius. A car bomb packing several hundred pounds of high explosives generates a tremendous amount of kinetic energy, yielding a much larger destructive radius. As the destructive radius increases, so too do the extent of physical damage and likelihood of multiple casualties, leading observers to see greater releases of energy as more severe.

Most terrorist groups appear to make decisions about weapons largely on the basis of resource availability. Often constrained in this regard, terrorists may find themselves unable to bring to bear weapons of choice on selected targets. Well-resourced groups, on the other hand, typically have the luxury of selectivity where weaponry is concerned, with some groups able to affect their own research, development, and manufacture capability.[66] Despite limitations that may be imposed on a terrorist group by its resource availability, observers of terrorist acts tend to assume meaning in weapon selection, in large part due to the extent of damage and injury the weapon causes.

Similarly, the nature of the victim adds to the perception of severity in a terrorist attack. Attacks limited to property damage are often taken to be less severe than attacks that result in casualties. Death and injury quite naturally lead to more empathy, more personalization, and a greater readiness to translate the pain and suffering to a highly personal context. Even when an attack produces casualties, perceptions of severity can be tempered by the identity of the victims. Victims intimately tied to identities, positions, or roles associated with high degrees of risk, such as police, security, and military personnel generally result in less shock then do attacks against innocent civilians. Similarly, stand-off attacks, where a close connection between attacker and victim at the time of the attack is missing, tend to engender less shock and fewer opportunities for personalization than do intimate attack settings, where attacker and victim share a common space.

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[66] Aum Shinryko, the Japanese group responsible for a sarin gas attack against the Tokyo subway systems, is an excellent example. Aum not only had access to millions of dollars donated by its adherents and supporters, but also enjoyed the services of a number of highly trained technicians and well-educated chemists, physicists, and medical doctors. Aum's supplies of sarin, VX, anthrax, and other chemical and biological agents were self-produced.

Location

Perceptions, assumptions, and interpretations of any inherent message in a terrorist attack can also be affected by the location of the attack. Violence in close proximity to an observer would be expected to have greater impact, and greater likelihood of attached meaning, than would an attack taking place far removed from the observer. Attacks at a distance offer increased opportunities to rationalize an attack as directed at others for reasons unconnected to an observer. Even when an attack is not directed at an observer, violence in close proximity may confuse an observer's interpretation of events such that nearness is assumed to correspond to deliberate targeting. While the spatial proximity of an attack may have no actual basis in terrorist decision-making, nearness tends to convey a sense of heightened relevance to the act. In much the same way, violence undertaken in the home territory of the terrorist or terrorist constituency personalizes the action by establishing context, even if unintentionally. Disassociation is more easily accomplished when an attack takes place on foreign soil.

Empathy

Terrorism is perceived as conflict between identifiable parties, although one side of the conflict may be described in rather amorphous terms such as *society*, the *capitalism system*, the *military-industrial complex*, or the *infidel*. Even so, specific target roles within the context of the conflict convey meaning to observers. Government and quasi-government institutions and personnel are, in a sense, expected targets of terrorist attacks. Violence directed against the institutions and mechanisms of state can be rationalized as a consequence of government policies and

practices, and attacks against individuals fulfilling governmental roles can be interpreted as a cost associated with position and duty. Attacks against non-governmental targets tend to be perceived differently, often since the civilian target is not readily seen as an active party to the conflict. As a result, attacks directed specifically at non-governmental entities are readily interpreted as more violent, more shocking, and more frightening given their unpredictability.

Measuring Symbolic Orientation

The symbolic message of an attack, called here symbolic orientation, is held to be a combination of attack frequency, severity, degree of spatial separation between attack and observer, target identification, weapon selection, and intimacy. These factors combine to create a critical component of the terrorist's message, helping provide important interpretive context to any available rhetorical message. Where rhetorical communications are missing, the symbolic message conveys meaning regardless of any intent to do so by the terrorist. When rhetorical communications are a factor in activity interpretations, the symbolic meaning attributed to attacks serves to reinforce the message conveyed by other means. Positive reinforcement, when the interpreted symbolic message generally supports the rhetorical, enhances a terrorist group's efforts to build a sympathetic and supportive constituency by offering a consistent, easily interpreted message of clear direction, purpose, and goals. Negative reinforcement, on the other hand, where the intended or inferred message contained in the rhetorical and symbolic components conflict, would tend to confuse an intended audience, leaving observers to wonder what the terrorist's true objectives and intentions are. This lack of certainty in interpretation

and lack of consistency would tend to undermine the terrorist's efforts to build support, since individuals are being asked to assume considerable risk without clear establishment of suitable rationale.

Attack Frequencies and Symbolic Orientation

Few if any terrorist groups start at a high operational tempo. Typically lacking resources and access to preferred targets, most start small and build operational capability over time as the group gains members, mobility, information, and opportunity. Hamas, the Red Army Faction, and the Symbionese Liberation Army are not exceptions, with each leveraging resource and opportunity gains to build capability. The extent to which each was able to expand operational capabilities, however, was tied to its ability to not only acquire material resources, but members and support. The skills, knowledge, and abilities of their members, coupled with material resources, dictate the pace and scope of any capability expansion and increase in operational tempo. In all three examples, attack capabilities expanded over time, although to varying degrees, despite counter-actions undertaken by their opponents.

Attack Frequencies, Hamas

Hamas attacks against Israeli targets began soon after the organization was founded in 1987. The first attacks by Hamas tended to be small, rather intimate attacks characterized by lone individual attackers or small groups, using small arms or knives, to attack randomly selected Israelis. Over time, Hamas-authored attacks became more sophisticated and destructive, first with small squads of attackers

infiltrating Israeli settlements and the first deployment of explosives against Israeli targets. In 1992, Hamas' military wing, Izz ad-Din al-Qassam Brigades, was formed in order to increase the pressure on Israel. Initial Qassam Brigades activities, however, tended to target representatives of Israeli state authority, such as Israeli soldiers and infrastructure. In February 1994, an Israeli settler, Dr. Baruch Goldstein, attacked and killed a number of Palestinians at the Cave of the Patriarchs, prompting Hamas to expand targeting to include Israeli civilians. By 1994, Hamas had expanded its operational capability, using a car bomb against an Israeli target for the first time.

Hamas' military strategy continued to evolve at a rapid pace (Figure 18). Between 1996 and 1999 (months 98 through 145), as the Palestinian Authority and Israel, under the encouragement of the United States, moved the peace process forward, Hamas used a series of suicide bombings, followed by relative restraint, in an effort to disrupt the progress made in resolving Palestinian-Israel differences (Karmon 2000). Palestinian political aspirations appeared to be moving closer to realization as the peace process moved forward, particularly with the 1996 Palestinian legislative and presidential elections, which Hamas boycotted. Attacks by Hamas continued, although at a generally low level.

In September 2000 (month 154), however, Israeli Prime Minister Ariel Sharon visited the Western Wall in Jerusalem, sparking the beginning of the 2nd Palestinian Intifada. Within a year of the resumption of unrest in Gaza and the West Bank, Hamas had begun to actively exploit the situation by increasing its operational tempo against Israel. At the same time, tensions between the Palestinian Authority and

Hamas increased as the Arafat government worked to both continue the peace process and restrain Hamas. Israeli actions against Hamas also increased in tempo and scope, resulting in the death of senior Hamas figure Salah Shehadeh and 14 others in an airstrike in July 2002, Qassam leader Ibrahim al-Makadmeh in March 2003, and Qassam leader Ismail Shanab in September 2003. One month after the death of Shanab, Israel wounded Hamas founder Sheikh Yassin in another airstrike. By January 2004

Figure 18:   Hamas Attack Frequency Over Time (attacks per month)
Source: Author's construction
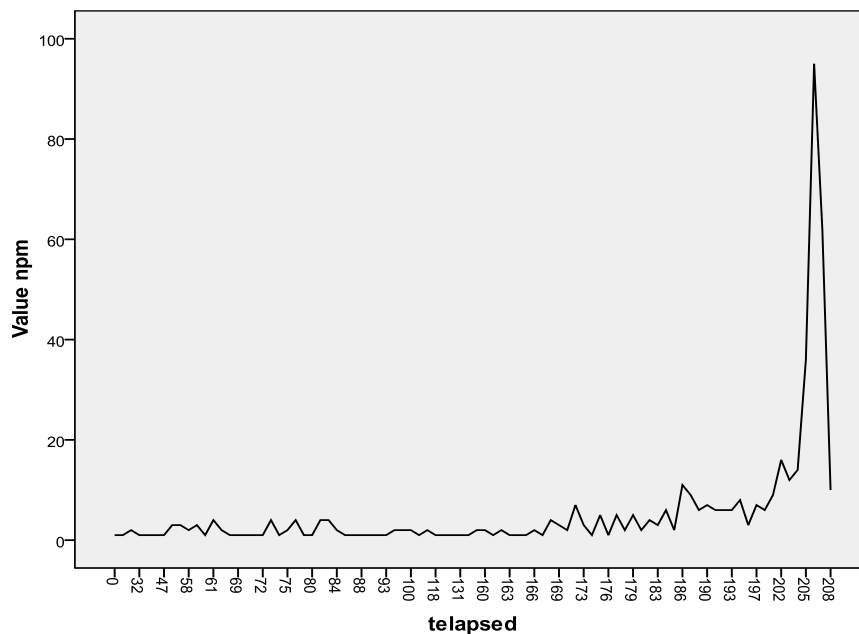
(month 194), deputy Hamas leader al-Rantisi had offered Israel a 10-year truce in exchange for Israel's withdrawal to the 1967 borders, but Israel made its position quite clear when it killed Yassin in an airstrike in March, then killed Yassin's successor, al-Rantisi, in another airstrike one month later.

Tensions between Hamas and the Palestinian Authority continued to escalate, as did the conflict between Hamas and Israel. In September 2004 (month 2003), Israel killed senior Hamas figure Izz el-Deen Sheikh Khalil in Damascus, Syria, a presumed safe haven for Hamas leaders. Two months later, Palestinian Authority president Arafat died, opening the door to open armed conflict between Hamas, on the one hand, and the Palestinian Authority and Fatah, on the other. Seizing the advantage born of Fatah and Authority weakness in the wake of Arafat's death, Hamas' operational tempo increased significantly by late 2004 and early 2005. It was during this period, too, that Hamas expanded its ability to operate in Gaza with relative impunity, offering it an unprecedented opportunity to use Gaza as a launch area for its emerging longer-range strike capabilities. Much of the rapid increase in attack frequency during this period can be traced to a significant expansion of Hamas' use of mortars and self-produced Qassam rockets to strike Israeli territory. By October 2003, Hamas had increased its operations tempo from roughly 2 to 3 significant attacks per month, to an average of 8 to 9 per month, then to as many as 95 in December 2004.

Symbolic Orientation, Hamas

The calculated symbolic orientation metric for Hamas (Figure 19) between March 1987 (month 1) and February 2005 (month 208) shows a wide degree of variance, consistent with the ebb and flow of active conflict between Hamas, the Palestinian Authority, and Israel. Prior to the beginning of the 2nd Intifada (September 2000, month 154), levels of violence were relatively low, except for a significant spike between July 1997 (month 116) and September 1997 (month118). In those months, Hamas suicide bombers attacked the Mahane Yehuda market and the Ben-

Yehuda shopping center, both in Jerusalem, resulting in 195 and 209 casualties

respectively. With the beginning of the 2nd Intifada, however, Hamas violence

became more frequent, more pronounced, and potentially more destructive. The first

three years, through September 2003, saw a tremendous increase in the number of

suicide bombings attributed to Hamas, notably in a wave of attacks against passenger

busses, and an increasing reliance on mortars and Qassam rockets targeted at Israeli

cities and settlements near Gaza. As attack frequency increased, so too did either

casualties or the potential for casualties, making Hamas attacks overall much more

deadly than was the case prior to September 2000. The increase in violence can also

be tied to growing armed conflict between Hamas and the Palestinian Authority,

although the worst of this internal conflict took place in a period beyond the bounds

of the present examination.

Figure 19:   Hamas Symbolic Orientation Over Time
Source: Author's construction

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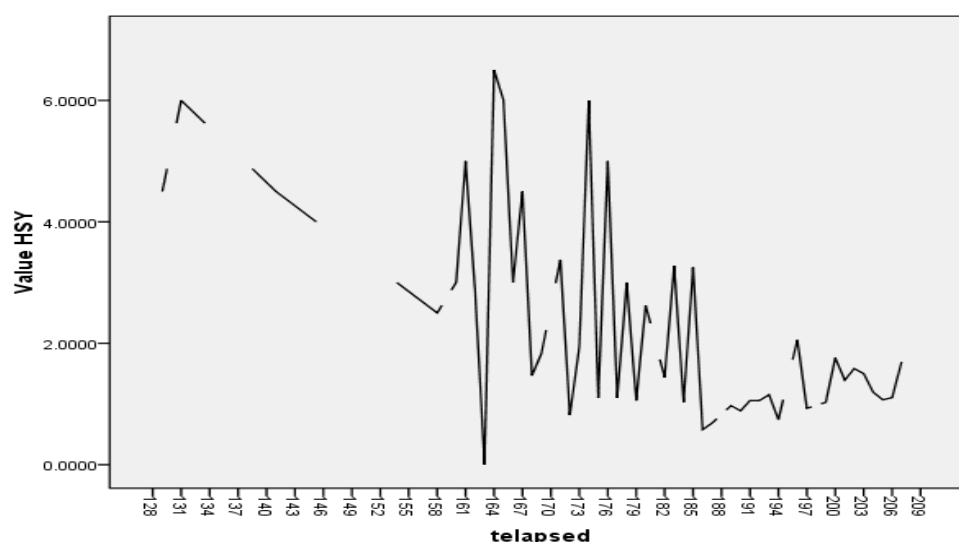
Attack Frequencies, Red Army Faction

The birth of the Red Army Faction is a little less clear than that of Hamas. Variously given as 1968, 1969, and 1970, this paper accepts 14 May 1970, the date claimed by the RAF for its founding, as the beginning of the group. Emerging from the leftist student movement in German, the RAF was but one of a number of violent organizations seeking to spark a communist revolution to free the proletariat. To the early RAF ideologues, the German state was a thinly disguised legacy of the Third Reich, now beholden to the imperialist plans and aspirations of the United States. Even so, the early years of the RAF were highlighted by low-level violence revolving mainly around a few firebombings, armed robberies, and shootouts with police (Figure 20). By late 1970 and early 1971, the RAF had developed something of a "Robin Hood" reputation among the German left, earning the group the highest level of public popularity it would enjoy (Huffman 2000. See also Baumman 1977; Becker 1977; Cook 1982; and Merkl 1995).

By 1972, the RAF had begun using explosives, targeting police, the German judiciary, the German press, and U.S. Army facilities. The group' sophistication also increased, with an attack in Heidelberg consisting of paired, near-simultaneous bombings on a U.S. military facility. In June (month 26), however, the founders and leaders of the RAF – Andreas Baader, Gudrun Ensslin, Ulrike Meinhof, Holger Meins, and Jan-Carl Raspe – had been captured by police, leaving the RAF to struggle for a short while as new leaders gained experience. Also during this transition period, another militant left group, the Socialist Patient's Collective,

merged with the RAF, ultimately taking the group into one of its most well known

attacks. In April 1975 (month 60), the RAF seized the West German Embassy in

Figure 20:   Red Army Faction Attack Frequency Over Time
(attacks per month)
Source: Author's construction
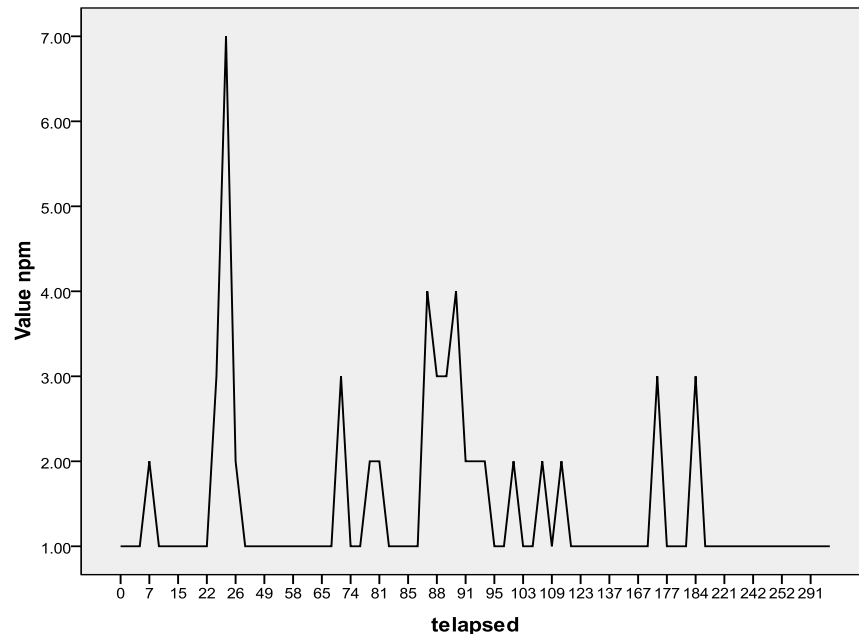
Stockholm, Sweden, demanding the release of jailed RAF members. Neither the

German nor the Swedish governments exhibited much inclination to comply, leading

the RAF to execute several hostages and trigger an explosion on the first floor during

an abortive rescue operation. Following the Embassy siege, the RAF resumed a more

familiar pattern of activity in German, often relying on bombings and shootings to

convey its messages.

RAF prisoners in Germany's Stammheim prison remained a focus for RAF

efforts through 1977. As the trials of Baader, Ensslin, Meinhof, and others

progressed, RAF attacks were undertaken to direct attention to the claimed inhuman

conditions under which RAF prisoners were held and were often accompanied by demands for the prisoners' release. Beginning in July 1977 (month 87), RAF violence escalated considerably, leading the next eight months to be referred to as the "German Autumn." During this period, the RAF killed Dresdener Bank Director Jürgen Ponto during a botched kidnapping attempt, kidnapped then executed Hanns-Martin Schleyer, were the intended beneficiaries of an airline hijacking by the Popular Front for the Liberation of Palestine,[67] and witnessed the jailhouse suicides of Baader, Ensslin, and Raspe.

In the late 1970s and early 1980s, the RAF began to take a more noticeable internationalist position, striking against high profile American and NATO targets, such as NATO's Commander, General Alexander Haig (June 1979, month 110, in Mons, Belgium), the U.S. Army commander in Germany, General Frederick Kroesen (September 1981, month 137), and at military facilities including Ramstein Airbase (August 1981, month 136), Oberammergau (December 1984, month 176), and Rhein-Main Air Base near Frankfurt (August 1985, month184). This renewed emphasis on foreign targets coincided with the RAF's strategic alliances with France's Action Directe and Italy's Red Brigades in an effort to form and international revolutionary front and position itself as the vanguard in the march toward communism. Perhaps ignorant of prevailing social norms and expectations, and perhaps dismissive of them, the RAF murdered an American soldier, Edward Pimental, simply to obtain an identification card that was subsequently used to gain base access for the Rhein-Main

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[67] Following less than a year after the successful rescue of hostages from an Air France flight in Entebbe, Uganda, by Israel, this incident was resolved when German commandos successfully assaulted the aircraft and its hijackers in Mogadishu, Somalia. The PFLP commandos had demanded, in part, the release of RAF prisoners on trial at Stammheim.

Air Base bombing. Pimental's murder was widely seen as callous and unnecessary, even by other leftists and militant organizations in Germany, leading to a storm of criticism directed at the RAF (Arm the Spirit 1994). The combination of sharp criticism, deep self-examination and criticism by its leaders, and the cumulative effects of effective German police and security actions undermined the RAF's will to continue. While the group did carry out additional attacks culminating in the bombing of a new high security prison in June 1993 (month 278), the RAF's credibility and operational effectiveness declined precipitously following the Pimental murder, never to recover.

Symbolic Orientation, Red Army Faction

The symbolic impact of RAF actions (Figure 21) exhibits a varied picture, with considerable variations over time. Many of these variations can be attributed to changes brought about by new leaders stepping up to replace those captured or killed by police or by efforts of the group to affect the release of their imprisoned comrades. The Stammheim trial period and a corresponding wave of prisoner-staged hunger strikes, from November 1974 (month 55) through July 1977 (month 87) shows the RAF employing a variety of means, including assistance from Palestinian groups, in an effort to achieve its goals. One prominent hunger-striker, Holger Meins, died as a result of his refusal to accept nourishment in November 1977, triggering a spate of efforts, both inside Stammheim and outside, to bring the plight of RAF prisoners to a hoped-for sympathetic public. In the months following the German Autumn (1977,

Figure 21:   Red Army Faction Symbolic Orientation Over Time
Source: Author's construction
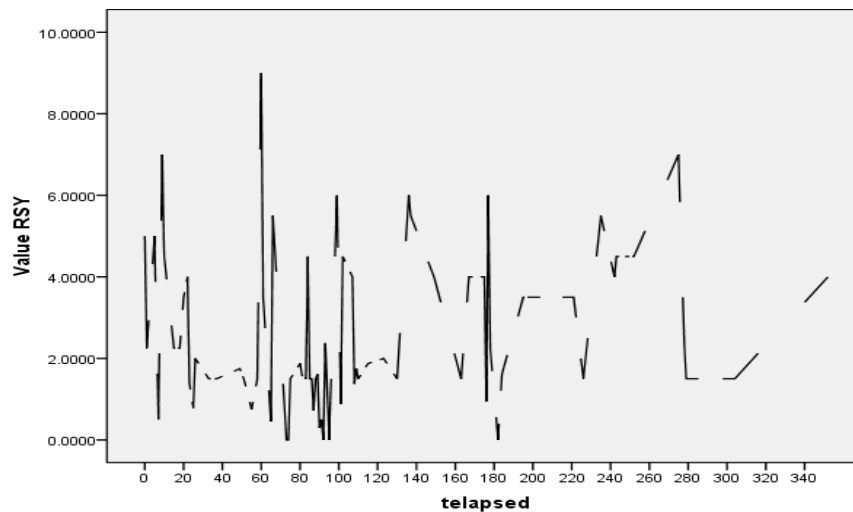
months 86 to 92), and the group's alliances with French and Italian terrorists (months

175 to 180), the RAF's symbolic orientation metric shows a more concentrated

pattern of flux, perhaps reflecting an internal conflict over scope and direction of

activities by group leaders.

Attack Frequencies, Symbionese Liberation Army

Compared to Hamas and the Red Army Faction, the SLA had an exceptionally

short lifespan, lasting from the summer of 1973 to September 1975 (Figure 22).

During this period, the SLA authored only13 acts of violence and ultimately suffered

the deaths of more members than injuries caused to others. Founded by an escaped

California prison inmate, Donald DeFreeze, the SLA tried to position itself as a

liberating organization established to fight for and free peoples of all races and ethnic

backgrounds from oppression. Although espousing harmony of all peoples, the SLA

undertook as its first overt act of revolution the murder of Oakland, California,

schools superintended Marcus Foster in November 1973 (month 4). When the Foster

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murder failed to generate the support and sympathy the group expected, it chose as its second act the February 1974 (month 7) kidnapping of Hearst Corporation heiress Patricia Hearst from her Berkeley, California, apartment. The group contented itself to a series of bank robberies for the next few months, increasing its operational tempo to two events in May 1974 (month 10) only by happenstance. On May 16, two SLA members were shopping in a Los Angeles sporting goods store when one decided to shoplift a pair of socks. When a security guard intervened, the SLA's waiting driver, reportedly Hearst, fired on the store's exterior signage in order to affect the release of her comrades. The following day, six members of the group died during a shootout and fire at their safe house in a confrontation with Los Angeles police.

The survivors, Bill and Emily Harris, along with Hearst, spent the better part of the next year attempting to rebuild the group, eventually recruiting a small number of individuals. In 1974 and 1975, the SLA again resorted to bank robberies as their primary means of expression until a last spasm of violence, in August 1975 (month 25), when the group attempted to kill police officials in California using explosive devices, most of which failed to detonate. The SLA ceased to exist after September 1975, with all members at that time dead, imprisoned, or in hiding.

Figure 22:   Symbionese Liberation Army Attack Frequency
               Over Time (attacks per month)
               Source: Author's construction
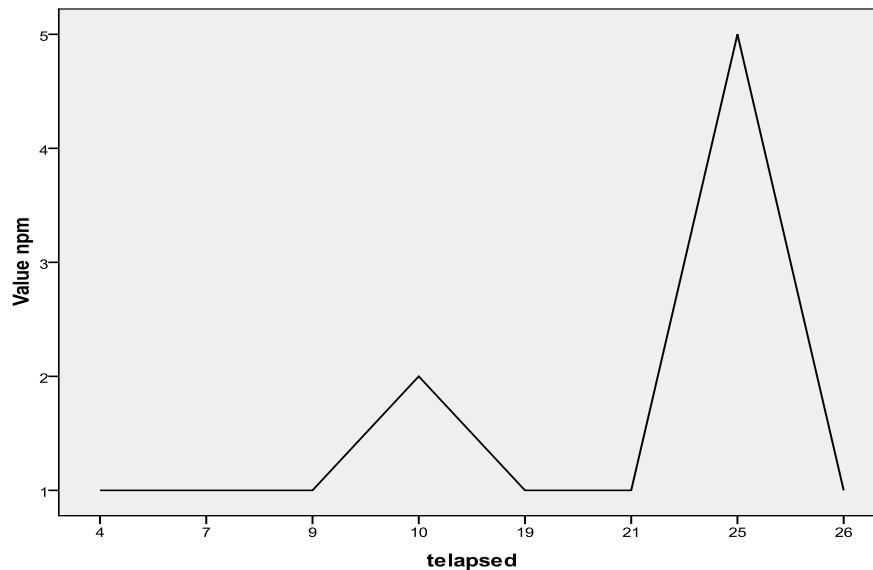
Symbolic Orientation, Symbionese Liberation Army

The display of calculated symbolic orientation for the SLA (Figure 23) shows

marked ebbs and flows in SLA violence, peaking during two significant points in the

organization's life. The murder of superintendent Foster in November 1973 (month 4)

appears as the high point in SLA activities, followed closely by the near decimation

of the group in May 1974 (month 10) in Los Angeles. Following a rebuilding period

by the survivors, the group's operational capabilities were essentially ended, with the

remaining upticks in symbolic orientation reflecting more intent than actual

capability, notably in a spasm of bombing attempts in August 1975. The group's

deviations, however, are even fewer than that, since the Los Angeles shootout was

neither sought after nor initiated by the group.

Figure 23:   Symbionese Liberation Army Symbolic Orientation
Over Time
Source: Author's construction
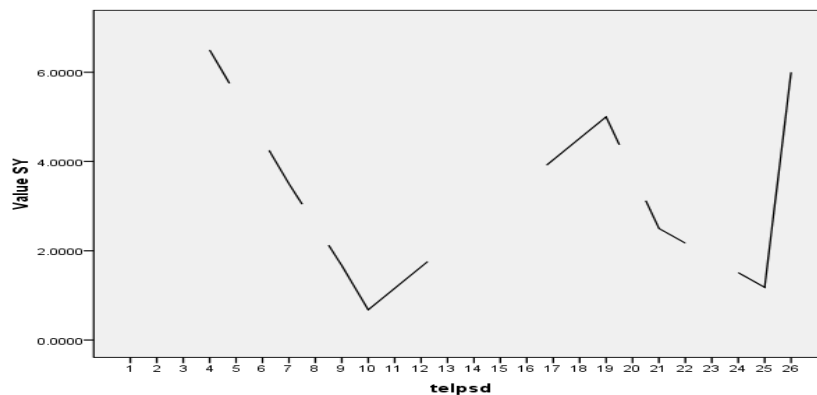
Hamas, the RAF, and the SLA also exhibit noticeable differences in their

patterns of symbolic orientation, both from each other and from their established

patterns of attack frequency. These differences are most likely attributable to the

unique aspects of each organization, its resource availability, and its operational

context. Since each has a specific group of people it presumes to be its constituency,

each must deal with a unique set of audience norms, expectations, and interpretive

tendencies. With differences in interpretive context, each group could be expected to

attempt to reach its presumed audience in a manner expected to have both relevance

and meaning to that audience. Given the uniqueness of each group's situation and

audiences, differences observed between groups are not remarkable, although within-

group differences between attack tempo and symbolic orientation, as discussed,

certainly are.

Expected Affinity

The complex interplay of terrorist actions and rhetoric help dictate the degree

to which a targeted audience is affected by the terrorist's message and the degree to

which that message holds resonance among the members of that audience. For an organization attempting to generate support and sympathy such that it can improve operational effectiveness and grow into a more powerful and compelling claimant to standing and power, it must find a way to successfully establish a connection to its targeted constituency. The degree to which these efforts are predicted to succeed is measured by expected affinity, a combination of adoption and application of the rhetorical elements critical for effective persuasion, and the symbolic aspects of unintentional and intentional meaning associated with an action. The more a terrorist group succeeds in establishing a mutually reinforcing relationship with an audience, the higher the value of expected affinity forecast.

Hamas Expected Affinity

Hamas exhibits fairly sharp increases in expected affinity over the October 1998 (month 131) to January 2002 (month 170) period for which both communiqués and records of attacks are available (Figure 24). The flattening of the graph after January 2002 is more reflective of a lack of data than a change in Hamas activities. The increases in the 1998-2002 period are consistent with the record of escalation of Hamas attacks on both Israeli and Palestinian Authority targets, incorporating changes in tactics, weaponry, and target selection. These increases are also consistent with changes in the tone and texture of Hamas statements during the period. In October 1998, a significant portion of Hamas' statements were devoted to analysis and criticism of the Wye Memorandum, a statement of intent signed on the 23rd by Israeli Prime Minister Netanyahu and Palestinian Authority President Arafat. In the Wye Memorandum, the PA and Israeli governments outlined a series of steps each

side agreed to take in the expectation that the cumulative impact of implementation would advance the cause of a permanent peace. Hamas, however, objected on ideological grounds to any concession, or appearance of concession, to the Israelis. At this point, however, Hamas leaders felt a need to explain to their targeted audience the shortcomings and hidden dangers of cooperation with Israel:

> In view of the dangers of this agreement and its negative consequences to the Palestinian Cause and to the present and future conditions of the whole region, we, in the Islamic Resistance Movement, would like to introduce this memorandum directly to our People and Nation as part of our duty to enlighten and warn them. In addition, we strongly encourage everyone to play their role in defending Palestine's Cause, its people and its holy places, as well as to work seriously to prevent the expansion of the Zionist project at the expense of the Nation's interests now and in the future. (Hamas 1998)

In seeking to inform the Palestinian people, Hamas chose a reasoned approach, taking care to explain the provisions of the Wye Memorandum and explaining how, as interpreted by Hamas, the agreement exclusively acknowledged Israeli concerns and expectations while abrogating Palestinian rights and aspirations. Hamas also took pains in its critique to paint the Wye accord as a creation of the Israelis and the United States, suggesting that Arafat was too weak willed to resist the demands of those opposed to Palestinian self-determination and independence and noting that "…Netanyahu has obligated the Palestinian negotiators to nullify specific provisions of the Palestinian National Charter in a humiliating manner." (Hamas 1998)

As Hamas sought to foster not only a sense of common cause with its targeted audience, it worked to portray itself as the only organization holding steadfast to the interests of the Palestinian people. At the conclusion of its criticism of the Wye Memorandum, Hamas authors noted its "keenness to preserve National unity,"

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suggesting explicitly that the Palestinian Authority had failed in its obligations to place the interests of Palestine first.

Figure 24:   Hamas Expected Affinity Metric Over Time
Source: Author's construction
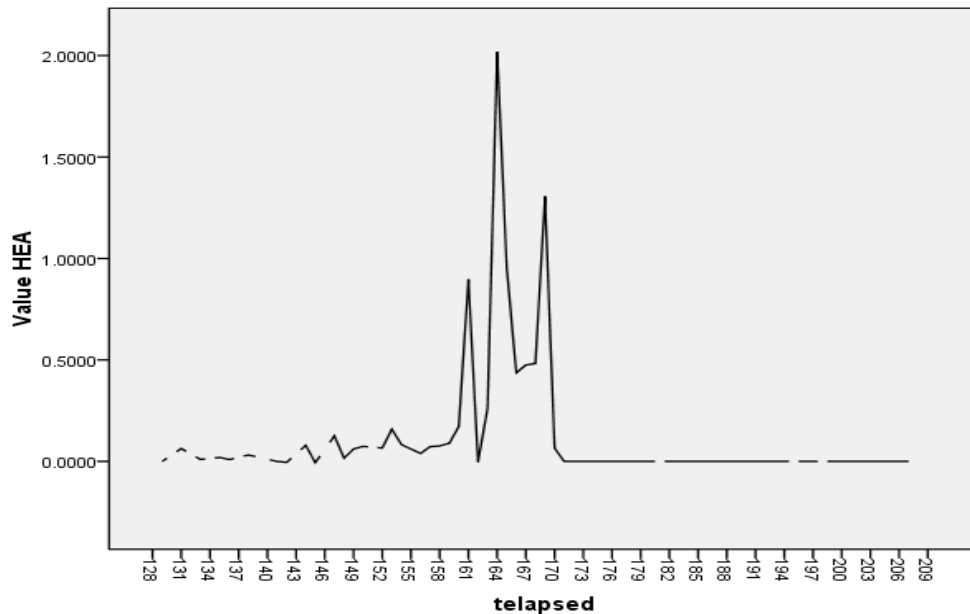
By the beginning of the 2nd Intifada (September 2000, month 154), the tone and tenor of Hamas communications had taken on an increased stridency and militancy. Less than one month after Sharon's visit to the Western Wall, a Hamas communiqué elevated Islam and the belief that Islam demanded sacrifice by announcing:

> Our souls and blood sacrificed for the sake of the Aqsa.
> Let the Aqsa Intifada continue and let the confrontations progress and let the ground turn into fire and volcanoes under the feet of the usurpers.
> Our Mujahid Palestinian people: "If ye are suffering hardships, they are suffering similar hardships; but ye have hope from Allah, while they have none." In these blessed days . . . the days of Jihad and martyrdom . . . the days of Jihad for the cause of Allah, in defense of His religion and in revenge to Al-Quds [Jerusalem], sanctities and the Aqsa . . . and in support of the Arab

and Islamic Nation's dignity, the precious Palestinian blood continues to be shed for the sake of the Aqsa . . . in these days you, our people prove again and ever again that you are the people of sacrifice, martyrs, pride, dignity, patience and steadfastness . . . . (Hamas 2000)

Israel is painted in Hamas statements as a government of "criminal Nazis" intent on massacring Palestinians and using advanced weapons against unarmed civilians. Israelis are continuously dehumanized in Hamas statements, while Hamas and the struggle against Israel are consistently painted in the most heroic terms. Absolutist language began to dominate Hamas communications, with the Palestinian Authority regularly condemned for ceding Palestinian rights, holding the Authority to an exceptionally high standard for conduct, one that the realities of peace negotiations could not allow:

[W]e affirm the decisive fact that no Palestinian, Arab or Muslim leader has the right of approving any agreement or treaties that reduce our people's rights in Al-Quds, the Aqsa, the whole land of Palestine, return of refugees, dismantling settlements, liberating our lands and establishing a real sovereign state. Any such agreements would not represent our people or their free will and they would not be binding on us or our people who will tear apart any humiliating agreement through blood of their martyrs and struggle and Jihad of their sons. (Hamas 2001)

The anniversary of the 2nd Intifada's start in September 2001 brought a reinvigorated stridency, exacerbated perhaps by the growing conflict between Hamas and the Palestinian Authority. As Qassam attacks escalated, particularly the growing deployment of suicide bombers against Israeli targets, the language used in Hamas statements took on an even greater reliance on heroic imagery, celebrating the martyrdom of their suicide bombers. These messages took full use of both religious language and amplified the religious iconography prominently displayed in Hamas-dominated areas of Gaza and the West Bank. Martyrs were lionized, held as an

example of the best Palestine could offer as young men chose to make the ultimate sacrifice for the ultimate welfare and well-being of others. Appropriate passages from the *Koran* dominated many messages, particularly those released by the Qassam Brigades, asserting by association a divine approval of Hamas actions. Most Qassam messages, for example, began with a passage not only glorifying the killing of non-believers but also the transfer of ultimate responsibility to Allah -- "It is not ye who slew them; it was Allah: when thou threwest, it was not thy act, but Allah's…" and ending with the exhortation that "… it is a Jihad until either victory or martyrdom." (See, for example, Qassam 2001)

Fitting a regression curve to the expected affinity metric for Hamas, with expected affinity as the dependent variable and elapsed time as the independent variable, between October 1998 and January 2002 (Figure 25) suggests Hamas found increasing success in gaining and maintaining a supportive audience, thereby decreasing its need to emphasize problem recognition, need for involvement, or constraint recognition in its messages. Over a 220-month period, Hamas' textual and symbolic messages exhibited a relatively steady decrease in expected affinity measures. Observed values deviate from the regression line to a noticeable degree around the beginning of the 2nd Intifada, but then quickly settle to levels closer to the predicted trend. This suggests Hamas' may have tailored its messages at the beginning of the 2nd Intifada in order to wrest initiative and sympathy from rival claimants among the Palestinian population. The observed tendency in expected affinity may not, however, be the direct result of Hamas communications and any meaning attached by Palestinian observers to Hamas' actions. Instead, the rapidly

changing environmental context presented a situational ground-truth that changed

daily, leaving all actors as reactive to events as proactive in deciding which course of

action to take.

Figure 25:   Curve Estimation, Hamas
Source: Author's construction
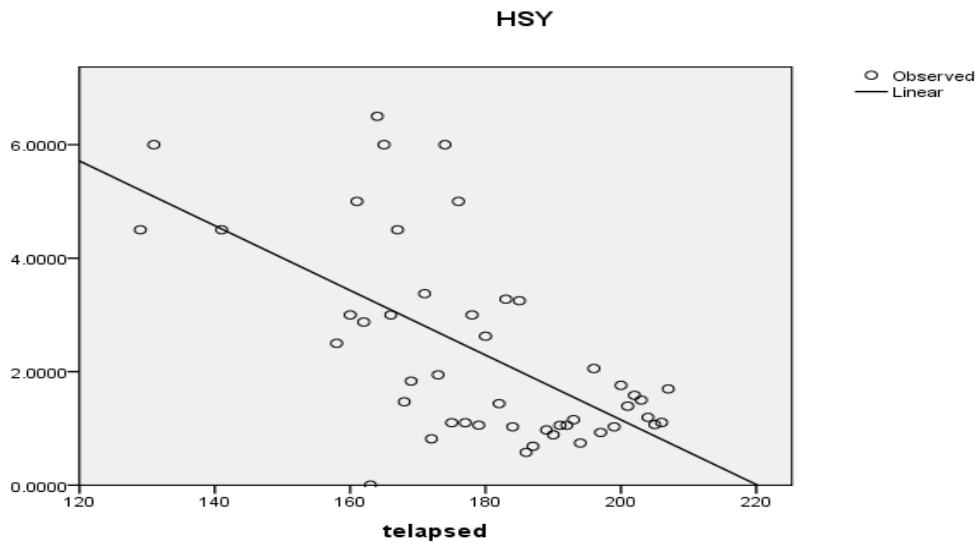
Analysis of variance in the Hamas expected affinity metric (Table 1) offers

several results at a statistically significant level. In this case, analysis of variance

suggests that some of the observed variance may be a product of the passage of time,

with something less than half the variance potential attributable to time ($R^2 = .388$).

The observed variation in the model is not likely the product of chance, given an F-

statistic of 28.586 at a statistically significant level. The slope of the fitted regression

line is a statistically significant negative, -.057, suggesting the observed trajectory in

expected affinity is attributable in part to the passage of time. This also suggests that

message repetition, particularly when consistent, positively contributes to observed

growth in affinity between Hamas and its targeted audience. Whether the largest

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portion of that contribution can be attributed to Hamas messaging or to some other

factor cannot at this point be determined.

Table 1:   Analysis of Variance, Hamas Expected Affinity
Source: Author's construction

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.623	.388	.375	1.352

The independent variable is telapsed.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	52.286	1	52.286	28.586	.000
Residual	82.308	45	1.829		
Total	134.595	46			

The independent variable is telapsed.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
telapsed	-.057	.011	-.623	-5.347	.000
(Constant)	12.556	1.924		6.525	.000

Other contributing factors may be adjustable by Hamas or its actions, or may

be equally immune to Hamas activities. Obvious potential factors, however, relate to

the ability of Hamas, its rivals in the Palestinian Authority and Israel, and the

population of Gaza to act freely and in accordance with its own goals and objectives.

The Palestinian Authority's freedom to act was limited by several factors, not the least of which were geographic diffusion of power and authority, the declining health of Arafat, Israel's increased tempo of military actions against Palestinian militants, Arafat's isolation in his headquarters by Israeli action, and continued anger among the Palestinian people over both Israeli actions and the ineffectualness of the Authority. Israel was constrained, too, largely by a perceived need to temper actions enough to avoid too harsh criticism from the United States. Hamas, however, enjoyed a bit more freedom than the Palestinian Authority in that its area of influence was geographically compact, largely limited as it was to Gaza, although it, too, was constrained by the pace and accuracy of Israeli strikes and the weight of opposing the long- standing icon of Palestinian autonomy struggles. Nevertheless, by remaining steadfast in active opposition to the Israelis and by effective use of both rhetoric and symbolism, Hamas gained overwhelming standing among its claimed constituency, leading to its landslide victory in Palestinian general elections in January 2006.

Red Army Faction Expected Affinity

Like that for Hamas, available data for the Red Army Faction varies considerably over time. Like all terrorist groups, the ability to operate effectively depends not only on organizational capabilities and preparedness, but also on the professionalism and preparations undertaken by the group and the impact of government counter-operations. While the RAF exhibited periods of frequent activity, it also experienced extended periods in which activities were largely limited to hunger strikes by imprisoned RAF members and self-reflection, often when new leaders

emerged to replace those lost to death or arrest. Much more than Hamas, the RAF emphasized ideological reflection, with considerable time and effort devoted to ideological development and discourse rather than persuasive communications. RAF expected affinity over time (Figure 26) reflects the sporadic nature of both RAF actions and RAF communications to a targeted audience. Significant decreases in expected affinity are noted in several periods, corresponding to the influence of actors external to the RAF itself. In the fall of 1971 (around October 1971, month 18), the RAF enjoyed considerable popular support, largely through romanticized notions of RAF banditry held throughout the German left. Shortly thereafter, in June 1972 (month 26), the RAF suffered a devastating blow when its leaders were arrested. A second significant trough in RAF expected affinity is found around November 1974 (month 55) and April 1975 (month 60), when RAF leader Holger Meins died during a prison hunger strike and the RAF seized the German embassy in Stockholm respectively. Other notable dips in RAF expected affinity are found immediately prior to the group's alliance with French and Italian terrorists (months 130 to 145) when the organization seemed a bit directionless, and the months following the murder of Edward Pimental (August 1985, month 184). The only notable peak, when expected affinity took on a positive value, is found in June 1993 (month 278), when the RAF bombed Germany's newest high-tech prison. This act would also prove to be the group's last major operation.

Figure 26:   Red Army Faction Expected Affinity Metric Over Time
Source: Author's construction
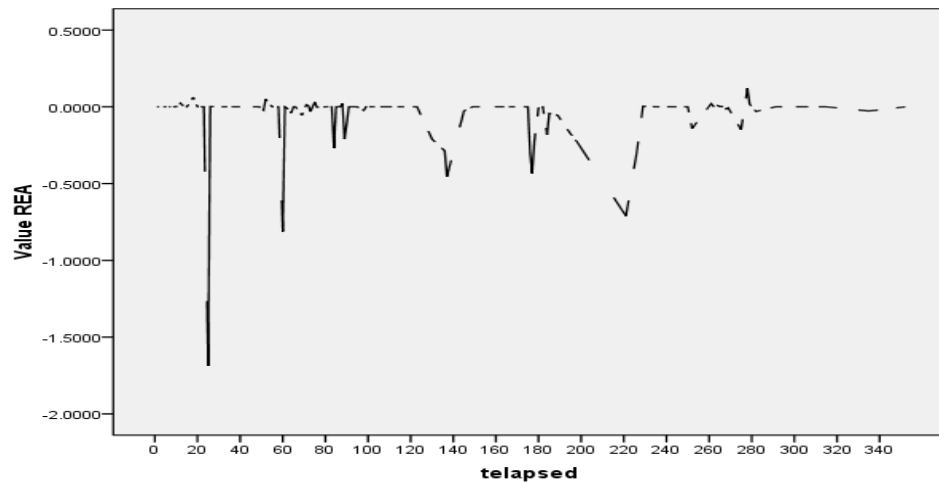
RAF messages took a hostile tone early on, using statements to outline its

interpretation of communist theory and attempt to establish itself as a leader in anti-

imperialist action. The statement released after the RAF freed Andreas Baader from

custody in September 1974, for example, asserted that:

> The struggle against imperialism, if we want it to be more than an empty
> slogan, has as its goal to annihilate, to destroy, to smash the system of
> imperialist domination on the political, economic and military levels, to smash
> the cultural institutions by which imperialism gives a hegemony to the
> dominant elites and to smash the communications systems which assure them
> their ideological power. (RAF 1974)

For the RAF, its struggle was not simply one of national liberation, it was "the

struggle of the revolutionary classes, the liberation movements of the Third World

and the urban guerrilla in the metropoles of imperialism." That, according to the

RAF, constituted their sense of place, of purpose, and of their destiny within the

context of "proletarian internationalism." (RAF 1974) RAF leaders sought to

establish themselves as ideological interpreters for the revolutionary masses, yet

appeared to have difficulty erasing sometimes subtle, sometime obvious self-

centeredness from their texts. Many of the RAF's texts seemed as concerned with

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convincing the left of the RAF's place at the vanguard as with persuading a general audience to afford sympathy and support to the organization. To the group's ultimate detriment, this preoccupation with their sense of place remained constant throughout the group's lifespan, despite changes in leadership.

RAF leaders also exhibited a pronounced tendency not only to think in absolutist terms, but to assume their presumed audience did as well. Holger Meins, the RAF member who starved himself to death in October 1974 during a hunger strike in Stammheim prison chastised a comrade who had chosen to end his participation in the hunger strike. A mere five days before his death, Meins wrote:

> … if you don't want to continue the hunger strike with us, it would be better if you said so; it would be more honest (if indeed you still know what honor is). In short, "I am alive. Down with the RAF. Long live the pig system."
> > Either a pig or a human
> > Either to survive at any price
> > Or to struggle until death
> > Either part of the problem
> > Or part of the solution
> > Between the two there is nothing
> Victory or death say the people everywhere, that is the language of the guerrilla, even with our tiny size here. …. (Meins 1974)

At the same time, the RAF displayed a persistent tendency to displace responsibility, blaming errors, mistakes, and often their own deliberate actions on authorities. The RAF's execution of German military attaché Andreas von Mirbach during the April 1975 Embassy seizure in Stockholm was explicitly blamed on the police, who "caused" von Mirbach's death by their failure to heed the RAF's deadline for evacuating the Embassy (RAF 1975).

The RAF's announcements assumed an even greater militancy as it entered into alliances with French and Italian terrorists, focusing in the 1980s more on its call

to arms than on its previous indulgence in ideological musings. In claiming an attack

on the U.S. Air Force base at Ramstein, the RAF's communiqué began with a strident

exhortation to arms:

> WAR ON IMPERIALIST WAR ! ! !
> ATTACK THE CENTERS, THE BASES, AND THE STRATEGISTS
> OF THE AMERICAN MILITARY MACHINERY ! ! ! . . .
> The imperialist war of destruction is now returning from the Third
> World to Europe, from whence it came. (RAF 1981a; RAF 1981b; see also
> RAF1982, RAF1985a, RAF1985b, and RAF1988)

During this period, the RAF began to reformulate its sense of position in the armed

struggle, placing itself in the forefront not only of armed struggle, but also assuming

the responsibility of enlightening Western audiences on revolutionary "praxis." A

May 1982 strategy paper released by the RAF explicitly announced this new stage in

the group's existence, where guerrilla and resistance were now seen as a united

international front rather than a collection of national liberation movements. The

German Autumn of 1977 was now explained as a mistake born of the limitations of

ideological development that prevented the previous generation of RAF leaders from

understanding their proper roles in revolutionary struggle:

> The struggle between the guerrilla and the State in [19]77 led to a
> reversal of the political situation here. Within the dialectic of attack and
> reaction the conditions of struggle have been transformed. So, in these new
> conditions the forms of struggle could and should change. After 77, nothing
> could be like it was before; not the State, not the left, not the role of West
> Germany in international politics, not the role of armed struggle in the
> international class struggle. We committed errors in 77 and the offensive was
> turned into our most serious setback. We will return to this later [in the paper]
> in detail.
> The offensive of 77 ended the struggle we had been waging since 70
> and introduced a new stage. The entire period of struggles that gave birth to
> the RAF and allowed it to grow was concentrated on the question of power. . .
> . (RAF 1982)

RAF explanations, however, could be quite torturous, raising concerns about both

actual intended audiences and the likelihood that any targeted audience could be

effectively reached. In explain the new stage of the revolution, the 1982 strategy

paper continued by explaining:

> Around the world, the struggle for liberation, which is part of the guerrilla project, has become a concrete reality that everyone is discussing. It is now necessary to become totally implicated in the situation here and to proceed in an inverse movement taking resistance in the metropole to the front line of international class warfare. (RAF 1982)

By the mid-1980s, the RAF had resumed a preoccupation with self-reflection,

turning much of its communications toward a more philosophical bent akin to that of

its early years. The criticism generated by the group's murder of Edward Pimental in

August 1985 prompted the RAF to attempt to justify its actions while simultaneously

chastising the German left for its criticisms and for its failure to understand

revolutionary necessity. In countering the criticism directed at it, the RAF

demonstrated convincingly that its focus lay not with persuading the German worker

or student, but in convincing the German left that the RAF's program of armed

struggle was the correct and appropriate course of action. In doing so, the RAF

revealed clearly that its targeted constituency was an even smaller sub-population

than generally assumed, one composed of people already in general agreement with

the RAF's goals and aspirations if not their strategy and tactics.

The criticisms of the RAF by fellow leftists appeared to have an effect,

however, in that statements in the early 1990s began to take a more self-critical tone.

In April 1992, the RAF announced a halt to attacks against German businessmen and

the German state. (RAF 1992b) In making such an announcement, the RAF signaled

its resolve to continue the struggle was crumbling, leading one authority to conclude

the group had issued its own obituary (Pluchinsky 1993). Five years later, the RAF

announced its end, declaring an end to its armed struggle. Acknowledging errors in

the course of its nearly 30-year history, the RAF continued to maintain the

correctness of its purpose, tying its failure to affect the political and social change it

sought in part to its own mistakes and in part to a German proletariat ill-prepared to

understand and fulfill their role in the revolutionary process. Noting that it had

"overestimated the support" for its latest reconceptualization of the struggle, the RAF

admitted it realized as early as 1992 that its efforts were a lost cause. Tellingly, the

RAF realized that decisions of its earliest leaders to focus on building an armed

organization at the expense of a legal movement doomed the group to failure:

> It was a strategic mistake not to build up a political-social organization alongside the illegal, armed organization.
> In no phase of our history was an outreaching, political organization realized in addition to the political-military struggle. The concept of the RAF knew only the armed struggle, with a focus on the political-military attack. . . .
> . . . The lack of a political-social organization was a decisive mistake by the RAF. It wasn't the only mistake, but it's one important reason why the RAF could not become a stronger liberation project, and in the end the necessary preconditions were lacking to build up a fighting counter-movement searching for liberation, one which could have a strong influence on social developments. (RAF 1998)

Fitting a regression curve to the RAF data (Figure 27) using ordinary least

squares offers a few additional insights into the RAF's failure to grow and develop

over time. The regression line shows a fairly flat trajectory, consistent with the

organization's evolution over 30 years. The group exhibited very little variation in its

efforts to persuade its audience to support the group, at least sufficient to generate

more than the minimum necessary to maintain a generally consistent level of

operational capability. While German authorities can certainly claim considerable credit for hindering the RAF's ability to thrive, the group unwittingly assisted by maintaining a rather arrogant and condescending tone in its communications. The regression lines suggests, by its slightly downward slope, that the RAF embarked on a rhetorical and symbolic course of action in the early 1970s and failed or refrained from altering its persuasive strategy in any significant way.

Figure 27:   Curve Estimation, Red Army Faction
Source: Author's construction
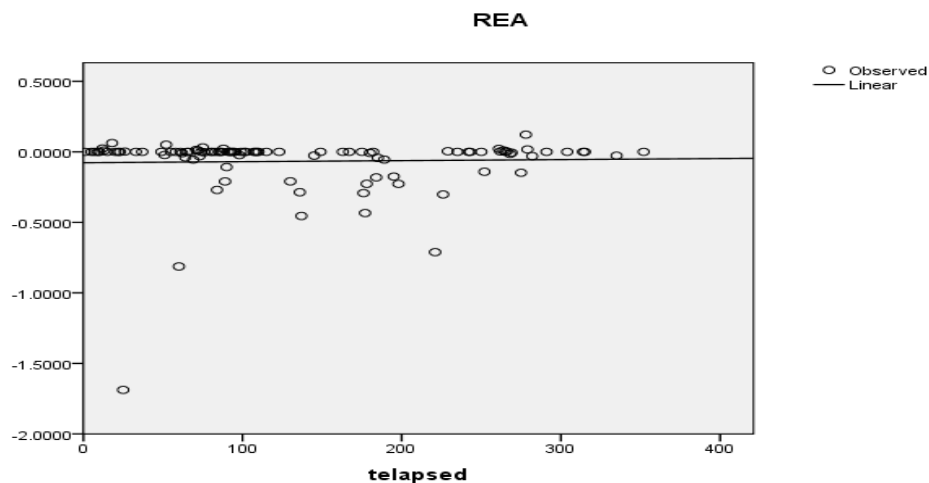
Table 2, the results of the curve fitting exercise and analysis of variance, reinforce this vision of the RAF's efforts, or lack thereof, to gain and maintain a supportive audience. While none of the result are statistically significant, they nevertheless suggest that the observed trend shown by the regression line may be consistent with the organization's lackluster efforts to reach an audience beyond those already in opposition to the state. Where Hamas appears to have had a decent understanding of the values, expectations, and aspirations of its audience, the RAF appeared to assume its audience necessarily perceived the world in much the same

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way as the group's ideologues did. This suggestion is reinforced by the very low and non-significant *F* statistic. RAF efforts, as expressed by its expected affinity scores, show considerable consistency despite the changes in environmental conditions and attitudes among the German public. Very little of the observed variation in the RAF's expected affinity scores, as little as four percent or less, can be accounted for by the simple passage of time. What variation there is may be more attributable to changes in RAF leadership.

Table 2:   Analysis of Variance, RAF Expected Affinity
Source: Author's construction

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.032	.001	-.009	.215

The independent variable is telapsed.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.005	1	.005	.105	.746
Residual	4.621	100	.046		
Total	4.626	101			

Coefficient

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
telapsed	7.450E-5	.000	.032	.324	.746
(Constant)	-.077	.037		-2.067	.041

The slope of the regression line is positive, but virtually horizontal, indicating further that the RAF's effort to build and maintain a sympathetic and supportive audience over time tended to remain static. This finding is consistent with a qualitative assessment of RAF messages that noted an RAF proclivity to pontificate rather that attempt to persuade. As time progressed and the RAF found itself struggling more simply to maintain a relatively stable standing, RAF statements grew more strident in tone, focusing more on identifying ideological correctness than audience connection. Examination of RAF texts shows a somewhat surprising lack of effort on the part of the RAF to establish a connection, a common cause, with its audience.

Given the homogeneity of the RAF's targeted audience, particularly in its focus on dialogue with radical German students and workers, the RAF did a rather poor job in constituency building efforts, just as its leaders finally acknowledged in its 1998 announcement of the RAF's disbanding. Having a pre-existing support network in the German left, however, probably allowed the RAF to overcome its inability to persuade its targeted audience and afforded the group an opportunity to maintain minimal membership and capability over time.

Symbionese Liberation Army Expected Affinity

The Symbionese Liberation Army enjoyed a very brief lifespan, barely two years, before collapsing of its own ineptitude. Enjoying its highest measure of expected affinity at the very beginning of the organization (Figure 28), the SLA quickly wasted any goodwill it might have enjoyed by its poor target selection. The

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act that introduced the SLA to the world was the murder of Oakland school superintended Marcus Foster. According to the SLA,

> The action taken by the SLA combat unit in reference to the Oakland Board of Education was a specific response to political police state programs and the failure of the Board to heed the rights and demands of the people in the community. The specific program was one of photo identification (similar to the system of apartheid in South Africa), biological classification in the form of bio-dossiers which classify students according to race and political beliefs, internal warfare computer files, and armed police state patrols within the schools. Intensely through intelligence operations carried out by one of the SLA information units was able to obtain factual information that Foster's signature was the first to appear on the Nixon Administration inspired proposal for armed police agents within certain Oakland schools and various forms of computer classification of students. Further intelligence revealed that Foster's background included membership on the Philadelphia Crime Commission. Foster's sideman, Blackburn [who was also shot], is a CIA agent. (Perry 1973)

Accused by the SLA of collaboration with the police in a scheme to abrogate the rights of students by issuing identification cards, Foster enjoyed considerable support among Oakland's minority population. Arguments by the SLA that the Foster murder served to help protect the people, particularly oppressed minorities, from the state apparently fell on deaf ears. As the Foster claims illustrate, SLA communiqués and announcements were characterized by pompousness, delusions of grandeur, ridiculous claims to exalted status, all mixed in with utopian ideals.

In announcing its goals in one of its first communications (SLA 1973a), the SLA stated its role was to "unite all oppressed people into a fighting force and to destroy the system of the capitalist state and all its value systems." The SLA would do this, it announced, by forming a "people's federated council," composed of one male and one female representative from each "People's Council" or "Sovereign

Nation of the Symbionese Federation of Nations," which would meet to form trade pacts and establish defense against any unspecified external threats. Showing their lack of ideological sophistication, the SLA stated its mission was to destroy the state in order to "give back to all people their human and *constitutional* rights" [*italics* added]. The SLA would bring about this new existence by seizing the state's lands, as well as those held by the "capitalist classes," and returning those lands to the people while establishing laws guaranteeing that no persons could own or sell land. The statement continued by asserting that "No one can own or sell the air, the sky, the water, the trees, the birds, the sun, for all of this world belongs to the people of this earth."

Figure 28:   Symbionese Liberation Army Expected Affinity
                Metric Over Time
                Source: Author's construction
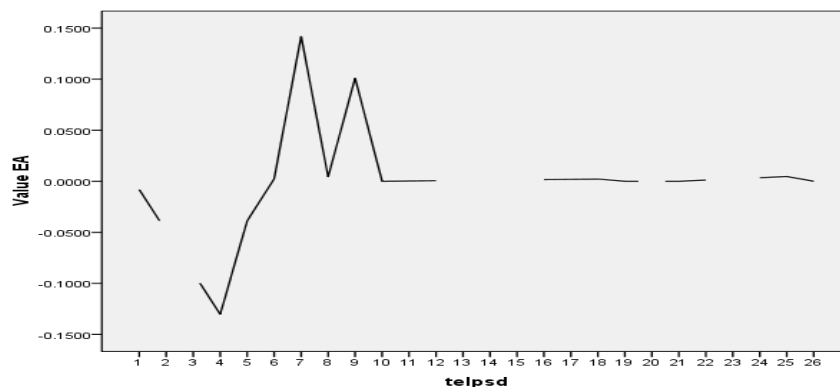
Subsequent announcements, however, quickly abandon the utopian ideals of the group's statement of goals, relying instead on grandiose claims of legitimacy and affectations of status. In a "Letter to the People," Fahizah, nee Nancy Ling Perry, announced she was a "freedom fighter in an information/ intelligence unit of the United Federated Forces of the Symbionese Liberation Army" (Perry 1973). Relying

also on blatant dehumanization and insult, the SLA also devoted considerable energy in its announcements disparaging the "San Quentin concentration camp," "Amerikkka," and "the Fascist Capitalist Class" (Perry 1973; SLA 1973b). By August 1973, SLA statements became more self-centered than explanatory, as evidenced by its "Declaration of War on the United States," which devoted little more than one paragraph out of nine to the reasons for its war against the state or to the evils of the state which demanded such action. The bulk of the declaration is devoted to efforts to define itself and its beliefs (SLA 1973b).

Foster's murder in November 1973 also corresponded to a significant change in SLA announcements. Whereas earlier statements sought to explain the organization, its purpose, and its vision of the future, the SLA's "Western Regional Youth Unit Communiqué #1" (SLA 1973c) emulated the form and tone of an official execution warrant, in this case issued by "The Court of the People." The statement offered a specification of charges, identification of target, and an "indictment" of Foster. The same format served to announce the SLA's kidnapping of Patricia Hearst (SLA 1974a), which it called an "arrest and protective" prisoner of war warrant. It was in this communiqué that the first use of the SLA's slogan – "Death to the Fascist Insect that Preys Upon the Life of the People" – first appeared. The SLA continued its assertions of legitimacy as its leader, Donald DeFreeze, alias "General Field Marshal Cinque," stated

> Today I have received an order from the Symbionese War Council, the Court of the People, to the effect that I am ordered to convey the following message in [sic] behalf of the SLA, and to insert a taped word of comfort and verification, that Patricia Campbell Hearst is alive and safe. (SLA 1974a)

The amateurishness of the SLA was readily apparent in its communiqués, particularly in those that carried the tone and tenor of a group that wanted to play war. In 1974, the group issued its "Codes of War of the United Symbionese Liberation Army" (SLA 1974b), laying out a serious of infractions for which a guerrilla could face the death penalty. Violating one of a list of specific of offenses would trigger action under which

> All charges that face a death penalty shall be presented to a jury trial made up of the members of the guerrilla forces. The jury shall be selected by the charged and the judge conducting the trial shall be selected by the charged also. The charge shall select his or her defense, and the trial judge shall select the prosecutor. The jury shall number at least 3/4ths of the remaining members of the cells, and the verdict must be unanimous. (SLA 1974b)

Offenses, which could result in such charges, included surrender, leaving a wounded comrade, informing or spying for the enemy, and desertion. Disciplinary action, determined by the guerrilla in charge but less than death, was prescribed for lesser offenses in order to "aid the collective growth of the cell." Noteworthy among the infractions is a rather lengthy injunction against the non-medicinal use of any drugs except marijuana or alcohol, in which specific conditions for use are laid out along with instructions that no more than half the members of the cell may be granted permission to use at any one time.

The SLA Codes of War also spelled out how its enemies were to be treated, with prisoners of war "held under the international codes of war" and given adequate food, water, exercise, and medical assistance. Acknowledging conscription, the SLA granted "rank and file" members of the military the right to surrender, guaranteeing that after they were disarmed and educated about the SLA's struggle, they would be released "in a safe area." (SLA 1974b)

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Perhaps due to the stress of loosing almost all its active members in a shootout with Los Angeles police in May 1974, the idealized world of the SLA began to collapse, leading to final communications that were considerably angrier and confusing. After bombing the Emeryville Police Station in August 1975 in long-delayed retaliation for the death of a local youth brought on by police action, the SLA released a statement that read:

> August 13, 1975
> REAL DATE: 5 years, 6 days
> WE RECKON ALL TIME IN THE FUTURE FROM THE DAY OF THE MAN-CHILD'S DEATH
> The explosion at the Emeryville Station of Fascist Pig Representation is a warning to the rabid dogs who murder our children in cold blood. Remember, pigs: every time you strap on your gun, the next bullet may be speeding towards your head, the next bomb may be under the seat of your car. The people and the people's armed forces will no longer quietly submit to the occupation of our communities and we will never forget the executions of Tyrone Guyton, Clifford Glover, Claude Reese, Alberto Terrones, and Derrick Browne. THERE ARE TO BE FUNERALS? LET THERE BE FUNERALS ON BOTH SIDES. LONG LIVE THE GUERRILLA. DEATH TO THE FASCIST INSECT THAT PREYS ON THE LIFE OF THE PEOPLE.
> (SLA 1975a)

A complete psychic break, perhaps, could describe the SLA's final communication, which was left written on the wall of a public bathroom:

> A. A Toilet Message WARNING !
>   To the FBI, CIA, DIA, NSA, NBC, and CBS:
>   There are a few clues in this bathroom. However, you will have to wait until they are dry. An additional word of caution: ½ lb. of cyanide crystals has been added to this "home brew." So, pig, drink at your own risk. There are many additional juicy SLA clues throughout this safe house. However, remember that you are not bullet-proof either. Happy hunting, Charles!
> B. Miscellany
>   Da da, Oh my
>   Books, once read, make good bullet-proofing.
>   Death to the fascist insects that prey on the life of the people.
>   (SLA 1975b)

Fitting a regression curve using ordinary least squares to the measure of SLA

expected affinity (Figure 29) demonstrates quite well the SLA's inability to connect

with a targeted audience, consistent with both a qualitative assessment of its messages

and an examination of its attacks over time. The regression line shows what appears

to be a slight upward slope. This trend clearly describes the stasis in communications

tone and focus, consistent with a long-term propensity by the group to indulge in

fantasy about their impact on and place in society.

Figure 29:   Curve Estimation, Symbionese Liberation Army
Source: Author's construction
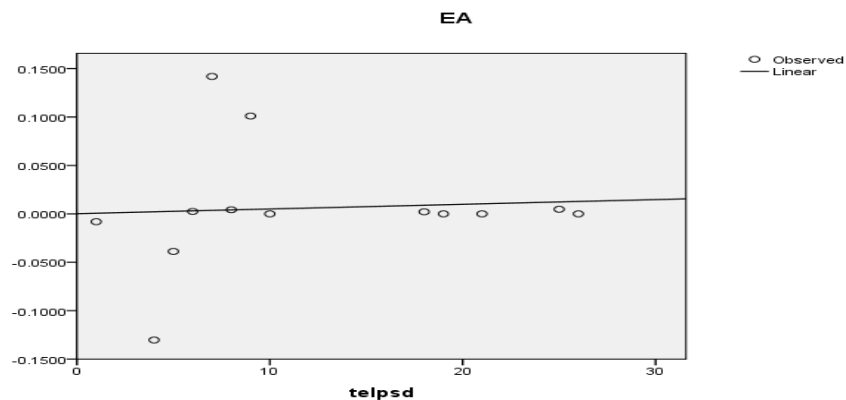
Analysis of variance between elapsed time and the SLA's expected affinity

measures (Table 3) helps reinforce the notion that the SLA's ideologues were

generally disconnected from popular concerns and interests, and that the disconnect

became worse as pressure on the organization's few remaining members increased.

None of the measures are statistically significant. Correlation between expected

affinity and elapsed time, even if it had been significant, is very low, as is the ability

of the model to explain observed variance. This reinforces the notion that SLA

communications reflected less of reality or the concerns of its targeted audience and more of the grandiose revolutionary fantasies of its members.

In the end, SLA messages and actions appeared more obviously at odds with the will and expectations of the public they claimed to represent. The fitted regression line generated using the expected affinity corresponds well with the organization's brief history. Of Hamas, the RAF, and the SLA, the latter stands out for both the

Table 3:   Analysis of Variance, SLA Expected Affinity
Source: Author's construction

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.064	.004	-.086	.066

The independent variable is telpsd.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.000	1	.000	.046	.834
Residual	.048	11	.004		
Total	.048	12			

The independent variable is telpsd.

Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
telpsd	.000	.002	.064	.214	.834
(Constant)	.000	.033		.005	.996

rapidity and the effectiveness with which it squandered any sympathy and support it may have had initially. The RAF, by the same token, failed to reach the audience it needed to reach, but this was due more to poor decision making by the group's leaders than it is to mistakes or ineptitude in communications efforts. Hamas, unlike the RAF and SLA, not only succeeded in transitioning from a conspiratorial terrorist group to mass movement, then government. Also unlike the RAF and SLA, Hamas's communications and attacks exhibited growth in sophistication over time, addressed topics and issues in culturally and politically relevant terms, carried a clear conception of its targeted audience, and successfully learned to tailor its entire communicative and persuasive strategy – both the rhetorical and the symbolic – to its recruitment and growth needs.

Taken together, the expected affinity measures can be used to place all three organizations along the hypothesized evolutionary curve introduced in Chapter Three. Given its recognition of the importance of strong bonds to a supportive audience and its success in addressing all elements of expected affinity, Hamas can be placed at or near criticality, the fourth phase transition at which the future evolutionary development trajectory rests firmly in the group's hands. For Hamas, expected affinity measures suggest a positive future evolutionary trajectory beyond the year 2002, which has been borne out in subsequent events. The RAF also understood the need for a supportive audience, but failed to appreciate the need for a more expansive one than the German left. The RAF's evolutionary trajectory would, as suggested by its expected affinity curve, be generally downward from an early high point, suggesting the organization never advanced far beyond the third phase transition. The

SLA, in sharp contrast to the RAF and Hamas, failed by all measures of expected affinity, suggesting the group never progressed far beyond the first phase transition and operational infancy.

Expected Affinity Metric Redux

This question addressed in this paper is a simple one: how can the apparent strength of connection between a terrorist group and its claimed constituency be assessed in such a way that projections of likely growth, stagnation, or decline can be made? The expected affinity metric developed sought to evaluate the likelihood that a terrorist group's messages, both rhetorical and symbolic, could empower and enhance that connection, thus allowing the terrorist to grow sympathy and support needed for continued organizational evolution. The apparent correspondence between organizational histories, trends and tendencies in attacks and messages, and calculations of expected affinity seems to suggest that the metric offers utility for such predictive assessments. Does this mean the expected affinity metric is indeed a useful, valid measure that can be applied to terrorism and terrorist groups as a way of assessing evolutionary trajectories? Perhaps.

Hamas has successfully transitioned from illegal violent actor to government in Gaza, a co-equal claimant to power and legitimacy with the recognized Palestinian Authority government in the West Bank. Since Hamas' founding in 1987, it has established itself as a modern exemplar of integrating itself, its goals, and its perceptions with that of its targeted audience. It has shown an organization can establish a meaningful connection with that audience, play on that audience's hopes, dreams, and fears, and establish with it not just a common bond, but a shared sense of

purpose and tolerance for risk. Hamas's communiqués have clearly demonstrated a persuasive sophistication that may be unmatched among modern terrorist groups. The group has also clearly demonstrated the persuasive potential of violent actions, using is continued weaponry development and target selectivity to its advantage by reinforcing its rhetoric and using the symbolism of its actions to underscore its claims of legitimacy and status. The expected affinity scores generated through analysis of Hamas actions and communications reinforce and support the organization's record such that real time assessment of Hamas words and deeds would be expected to indicate a fairly accurate projected evolutionary trajectory for the organization.

Similarly, the expected affinity measure appears to correspond well with the history of the Red Army Faction. The RAF operated in a more diversified environment than does Hamas, against state authorities that were clearly superior to the internal Palestinian authorities faced by Hamas, but perhaps inferior to Hamas' Israeli opponents. Nevertheless, the RAF was able to construct a program of communications and actions addressing a very specific target audience, and the assessment of RAF activities indicates that despite considerable fluidity in leadership, the organization managed to maintain striking message consistency over its long lifespan. Yet the RAF failed to achieve mass movement status and despite its claims to be at the forefront of the revolutionary struggle, found itself unable to generate significant sympathy and support even from among fellow militants. This failure, however, was the result of decisions made early in the RAF's existence, condemning the organization to a path offering little opportunity for evolutionary development. The expected affinity measure generated for the RAF agrees, showing a remarkable

consistency in both rhetorical and symbolic message content over the years, but with a slow decline as the organization found its natural constituency shrinking. Using the expected affinity measure as presently constructed in a real-time analysis of the RAF could consequently be expected to offer accurate general predictions of evolutionary trajectory.

The Symbionese Liberation Army presented a slightly different picture, primarily due to its exceptionally short lifespan and small size. A the height of its notoriety, the SLA numbered fewer than ten active members, six of whom died on live television is a shootout with authorities. During its existence, the organization never numbered more than a dozen or so and its operational capabilities reflected both its members' lack of sophistication and the organization's resource scarcity. Although the SLA made national and international headlines, particularly with its kidnapping and co-option of Patricia Hearst and its decimation at the hands of Los Angeles police, operationally the group remained weak and amateurish. Despite the revolutionary fervor claimed or adopted by its members, the SLA presented a portrait of spoiled, bored, would-be revolutionaries more in tune with an idealized and romanticized fantasy world than with the harsh and gritty realities of the streets. The SLA never made a connection with an audience and, indeed, their communications raise doubts about whether the group ever had a clear conception of whom besides themselves they represented. Communications quickly degraded from explanation of purpose to stridency and irrationality, likely alienating any presumed audience early in the organization's life. In the same way, the SLA's target selection either ran counter to public opinion, as with the Foster murder, or carried the aura of publicity

stunt as with the emergence of "Tania," Hearst's *nom de guerre* in the Hibernia Bank branch robbery. The group started out on a downward trajectory, in both words and deeds, and maintained a steady course throughout its existence. The expected affinity measure mirrors that steady descent, suggesting that it would offer effective predictive capacity for assessing likely SLA evolutionary trajectories in real time.

The apparent correspondence between the metric and organizational histories, however, does not necessarily mean expected affinity as currently constructed is ready for widespread application. It does suggest, however, that there may be a place in counterterrorism analysis for the measure, but only after additional work needed to refine the measure, to improve its analytic and predictive capacities and explanatory power, is conducted. The measure needs to be able to explain more variance than it presently does, and to be capable of doing so at acceptable levels of significance. In a seemingly contradictory way, the measure needs to be both more generalizable and more culturally and environmentally sensitive. The correspondence observed with the measure as presently constituted does, however, seem sufficient to conclude there is merit to continued development and refinement.

Chapter 7: Assessing Expected Affinity

Why terrorism begins, and how terrorism ends, are two of the most frequently addressed questions in terrorism studies. Despite the time and attention afforded each, there have been very few satisfactory answers offered. Many studies addressing questions of terrorism's growth, evolution, and decline focus attention on intra-group dynamics, leadership, and decision-making. Failure to develop operationally, to grow, and to achieve objectives are often seen as a result of internal dissention, incompetence, or bad decision-making. Other studies emphasize external factors, from the actions of other actors to changes in the operational environment of the terrorist group. In these studies, failure to develop is often explained by the effectiveness of counter-terrorist operations, competition among militant groups, resource scarcity, or the lack of a reliable state sponsor. Rarely do terrorism studies examine terrorism in the context of relational dynamics between actors in a complex interconnected system.

Terrorism studies typically focus on selected aspects of terrorism, the terrorist, or the terrorists' actions. By focusing on unique characteristics, entities, and activities, such studies begin from a restrictive perspective, one limited by the parameters set forth in the problem conceptualization used. These studies, whether acknowledged or not, portray terrorist groups and their members not as independent actors acting to manipulate other actors and their environment, but as tractable entities beholden to the decisions and actions of others. Terrorist groups are, in effect, assumed to be isolated, at least for purposes of scholarly examination, such that causal factors might be clearly identified and examined. While there are valid reasons

for taking a reductionist approach to the study of terrorism, the approach effectively

ignores a critical component of the dynamic social and political landscape of

terrorism, that is, the reciprocity of actions among actors in the system.

This examination took that overlooked perspective as its starting point,

considered terrorist groups independent actors, the potential equals of all other actors

in a system, struggling to find an optimal fitness in a highly complex, coevolutionary

environment. This environment is viewed as a fitness landscape, where every actor

behaves in ways intended to lead to ever-greater relative fitness and where the actions

of every actor change the fitness landscape encountered by every other actor. As but

one of many actors in a highly interconnected network, a terrorist group is subject not

simply to its own resources and decisions, but to the consequences of resource

availability, resource use, their own decisions, and the decisions of other actors.

Put in a network context, this investigation sought to develop a means for

evaluating the ultimate efficacy and effectiveness of terrorist activities in their quest

for greater relative fitness. Since at least 1877 (Martin 1985), terrorism has been

characterized as either propaganda of the deed or violent political theater, or both,

each of which implies conscious efforts to alter patterns of thinking and behavior.

Terrorists use both violence and words in an attempt to define context, thus

improving their chances of achieving higher levels. Consequently, terrorists use

violence, supplemented by the statements they release, to target an audience, as an

attempt to manipulate the environment. One reason these efforts are undertaken

reflect a desire and intent to reduce the relative fitness levels of competing actors,

thereby altering the fitness landscape in a way specifically detrimental to others. In

what may be called negative manipulation, terrorists use violence and threats of violence to weaken opponents, often by sapping the will to resist terrorists' demands or by constraining the opponents' ability to react effectively. This perspective lies at the heart of counter-terrorism literature and the literature addressing the impact of terrorist violence.

Terrorists may also engage in positive manipulation, where the terrorist group seeks to alter the landscape in a conscious effort to improve its own fitness levels without express regard for the impact on others. When positive manipulation is studied, it is most frequently seen in terms of terrorist funding, state support, recruiting, arms acquisition, and other resource-focused activities. This paper explored this positive manipulation process, albeit from the network perspective largely unknown in the literature. Here, emphasis is given to the deliberate efforts of terrorists to affect favorable landscape alterations through their communications with a targeted audience believed to represent some natural constituency of the terrorists' and through the symbolic messages contained within its acts of violence. By manipulating both the content of messages and the expected interpretation of violence, terrorists seek to gain and maintain an increasing measure of sympathy and support in order to improve their fitness with respect to other claimants for public approval.

This research addresses fitness landscape manipulation from the terrorists' perspective, specifically concerned with the terrorists' efforts to use words and deeds to gain advantage by building sympathy and support among a targeted audience. The question the examination addresses, then, is of the intent to affect attitudinal change

in a targeted audience by leveraging both words and deeds. Borrowing from extensive literatures on marketing and the diffusion of innovations, this approach posits a population can be segmented, with the appropriate segment targeted for provision of tailored messages designed to find and address issues of common concern and shared value.

To explore this interaction between terrorist and audience, a series of measures were created to evaluate terrorists' efforts and to assess the degree to which they appear successful in the design of their message and its delivery. These measures, culminating in one called expected affinity, place the terrorist group firmly in a small world context, and offer a means by which the potential for relative fitness gain, and subsequent evolutionary path, can be predicted. The results suggest expected affinity is a useful measure for predicting group evolutionary trajectories based on specific context manipulation efforts where no comparable metric or application exists. The results obtained demonstrate expected affinity's suitability for continued development and refinement, tailoring the application to the specific operational environment under study. As such, expected affinity offers a needed complement to existing social network analysis tools, which are focused on the structural aspects of the system and the implications of changes to that structure. The expected affinity metric opens new doors for understanding the process of terrorist group growth by addressing one of the dynamic interaction aspects of networks.

The Way Ahead

Given expected affinity's demonstrated utility, continued refinement should emphasize a number of developmental opportunities. Expanding the scope of inquiry

by broadening the class of terrorist groups examined will offer useful insights about contextual variations, thus allowing for greater attentiveness to the unique cultural, political, social, and ethnic aspects of the environments in which terrorists operate. The measure's generalizability can also be more thoroughly addressed in light of spatial and temporal variations through expanded application and validation. The present effort focused on assessing metric feasibility, therefore a broadly focused cross-generational approach was taken. Expanding and deepening single case studies, and including additional potential evolution direction determinants will offer more nuanced opportunities for evaluating the specific significance of individual factors. The detail and depth needed for this development far exceeded the design parameters of this study, yet are indicated as desirable exploration avenues for follow-on efforts.

This study addressed the general feasibility of a newly created metric. As such, the lack of solid statistically significant results does not invalidate the study. In a complex coevolutionary system, the number of causal factors for any process is unlimited, making statistical reliance in a feasibility study such as this unrealistic. For this reason, the study was designed to rest squarely on visual analytics, allowing graphic representations to suggest linkages, relationships, and trends that would be unrecognizable otherwise.

Since there is enough in the results to suggest further exploration is warranted, it is important to consider opportunities for continued development and refinement. Some opportunities can be found in more detailed consideration of the nature of the specific system environment in which a given terrorist group operates. The environments in which the SLA, RAF, and Hamas operated may offer some general

similarities, but each is a unique combination of actors, linkages, and situations, and all have an impact on not simply the terrorist group, but on all other actors in the system and on interactions between actors. Gaza, quite simply, is quite different from Germany and California. Each environment undergoes constant change as well, such that Gaza of the 2000s is quite different contextually from the Gaza of the 1980s. The same holds for any given location, making the operational environment of every terrorist group unique from that of all others. Addressing these unique features through in-depth case studies will offer opportunities for improving understanding of the struggle for greater relative fitness specific to that system.

Avenues for Environmental Exploration

Causal Multiplicity

The environmental arena in which terrorism takes place is not well represented by models of interactions. Models are generalizations, incorporating the most salient factors and excluding those less relevant factors. The real world context for terrorism is not neat and stable like the models created to understand it, but messy, complex, and ever-shifting. Which factors are *the* most salient factors cannot be easily known or understood with a high degree of certainty. Even were a more comprehensive list of salient causal factors of terrorism dynamics possible, that list would vary considerably with time and geography.

Developing more detailed, more nuanced case histories allows greater depth in examinations, but reduces general applicability with each refinement. Efforts to create a more generalizable and more widely applicable model force the examination in the other direction, where nuance and specificity are increasingly lost. While little

can be done to effectively and conclusively resolve the tension between the case studies and generational studies, recognition of the limitations imposed by the approach taken offers future opportunities to specify more explicitly the limits to any set of findings.

Agency

Terrorists do not operate in vacuums. Nor do their opponents or other actors in the system. Each actor possesses the ability to act at any time and for any reason. In large part, actions of actors in a system are limited only by the resources available to the actors and the rules under which they operate. Rules can generally limit behavior, but with terrorists, rule breaking is the norm, thus limiting the extent to which societal norms and values constrain actions. Terrorists act in ways suited to their purposes and intents, and their actions affect the perceptions, resources, and opportunities to act of other actors. By the same token, the actions of other actors – whether by intention or not – change the operational landscape of the terrorist, thereby opening new opportunities for the terrorist and imposing new constraints. Even so, the direction and scope of changes wrought by even the most inconsequential actor can be both profound and devastating to others. More frustrating still, these changes cannot be reliably predicted.[68] Given the mutability of the environment at the hands of every actor, scholars face an environment that not only changes continuously, but changes in unpredictable ways and at unpredictable frequencies. Thus, the agency of actors

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[68] In a scale-free system, where most nodes, or actors, are poorly connected to other nodes, a few nodes are highly connected, the distribution of nodes generally follows a power law. Societal settings are, due to the preferential attachment rules governing actor connections and interactions, scale-free networks. In such networks, actions of actors will most often result in minor system changes, but can, and do, at times yield far-reaching changes. Predicting which will generate which outcome, however, is impossible.

within the system introduces a degree of uncertainty that cannot be readily resolved. A more in-depth knowledge of each specific system to which the expected affinity metric is applied will thus offer additional opportunities to recognize the impact of actor agency.

Media

This examination was limited by design to textual messages found in published statements and communiqués, yet neither exhausts the range of media outlets available to terrorists. In different contexts, and among different groups, transmission of messages and demands can take a wide variety of forms, from word-of-mouth, to handbills, posters, graffiti, television, radio, the Internet, etc. Each form of communication can be expected to yield different reception rates and different perceptions. Visual imagery, such as that found on television, movies, posters, and handbills, can and often does generate a visceral reaction, particularly when graphic images address or suggest highly emotional themes. Purely textual communications, such as the print media, offer a degree of permanence, allowing for study at much later dates, but typically have a lesser impact than oral communications found in word-of-mouth, public speeches, radio broadcasts, and similar communications forms. Similarly, the emotional impact of visual imagery can be expected to lessen over time and distance as its unique and intimate tie to context weakens.

The authorship of a given passage can also have profound effects on the way the message is received and interpreted. Messages created and delivered by the terrorists themselves offer a more credible and genuine transmission of the terrorists' message than do messages filtered through intermediaries, regardless of how

unbiased that filter. Filtered messages can, and often do, carry some bias that would be expected to affect not only the message but also the way in which that message is interpreted. Where media outlets lack a tradition of independence and neutrality, the message of the terrorist is certainly to be biased, altered, or interpreted before it reaches its intended audience.

Message delivery immediacy may also affect the way in which messages are interpreted. The more time between an act of violence and receipt of a message explaining the terrorists' rationale, the more likely members of the targeted audience will have an opportunity to form their own opinions of the act and its authors. This may work in favor of the terrorist, but is equally like to be detrimental to his cause. Different message delivery paths also affect both message diffusion and event coverage. For a message to be effectively delivered, means of transmission must match the intended recipients' means of reception. If a targeted population cannot receive the terrorists' message, for any reason, a critical portion of the intended interaction between terrorist and audience is irretrievably lost. Detailed case studies, when incorporated in expected affinity application, will allow consideration of the unique media presentation and delivery factors that may be operative.

Proximity

Being at or near the site of a violent act carries significant consequences for the way in which that act is interpreted. The closer one is to violence, the easier it is to personalize the acts witnessed or suffered. The immediacy and nearness of the act create a sense of greater potential risk than do acts witnessed at a safe, comfortable distance. Distant acts of violence, no matter how devastating, offer the observer

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greater opportunities to dissociate from the act. As a result, distant witnesses and audiences should feel a lesser emotional impact and would be expected to react less strongly than those closer to the violence. Even so, with time and proximity, observers may become more hardened, more adapted to an elevated sense of risk, such that they become a bit more tolerant of the uncertainty generated by violent acts. For these observers, greater levels of violence or risk would be needed to generate the same emotional impact as acts of violence might otherwise produce. To use examples from the groups examined here, Gaza is much smaller than either Germany or California. Gazans typically live in denser communities, and exist in greater proximity to regular acts of violence, authored either by Hamas or in retaliation to Hamas violence, than did Germans and Californians. Violence, consequently, has an immediate, likely personal, impact on the typical Gazan, while relatively few Germans, and very few Californians, were personally touched by RAF or SLA violence. Proximity to violence, and an understanding of the length of time in closer proximity to violence, would be needed to better understand the degree to which spatial diffusion and separation might affect a terrorist's targeted audience. Proximity, then, is another area in which detailed case studies can beneficially supplement expected affinity application.

Audience Heterogeneity

Gaza's population is largely homogeneous, offering Hamas a consistent demographic against which it applies its persuasive efforts. Most Gazans are Muslim, responsive to some extent to messages leveraging the language or tenets of Islam. Hamas can, consequently, create and transmit messages with immediate cultural,

religious, and social relevance, appealing to a prevailing sense of justness and obligation that permeates Palestinian society. The Red Army Faction and the Symbionese Liberation Army, on the other hand, faced more heterogeneous populations. For the SLA, and to a lesser extent, the RAF, the targeted audience was a conglomerate of beliefs, values, and expectations not easily amenable to a single standardized message. The RAF, in limiting its audience to the German left, targeted a more specific population segment than did the SLA, but even then, the RAF's audience exhibited considerable ideological variability, making connections and persuasion more tenuous than the RAF assumed they would be. The extent to which, then, a terrorist group can either effectively segment a population or enjoy a largely homogeneous population can be expected to have a significant effect on the ease at which a suitable and consistent message can be crafted and delivered. Audience demographics add additional flavor to the expected affinity metric, but demands detailed case development for effective incorporation.

Future Refinements to Expected Affinity

Beyond incorporating case studies to leverage unique environmental and contextual factors of relevance, the expected affinity metric's applicability and generalizability can be expanded. In no small measure, metric improvements reflect the need to tailor any such instrument to the time and context of terrorist operations.

Content Categories

The content categories constructed for this investigation were broadly based, addressing very broad contextual categories and designed to capture many of the

highest frequency words associated with basic concepts of community, involvement, and risk. These categories do not, however, address the nuances of language associated with terrorism, such as the typical effort to dehumanize opponents. Based on broadly defined content categories, the expected affinity metric is tailorable, allowing narrowing or modification of categories to address very specific emotional and perceptual themes. Just as audiences can be segmented and targeted for persuasive efforts, the expected affinity measure can be further segmented and targeted to specific questions or aspects of the persuasive manipulation effort.

In much the same way, further tailoring could also consider and incorporate language more consistent with specific cultural, social, religious, or political contexts. The language of Islam, for example, is prevalent in Palestinian society, even among the less devout. Regardless of the degree of devotion present in Palestinian populations, Islam maintains direct cultural and historic relevance that could be explicitly addressed by modifying content categories. In secular societies, like those of Germany and the United States, religion would be expected to have much less of an impact on message recipients. Content dictionaries tailored to those contexts, then, would exhibit lower religious orientation in order to maintain fidelity with the applicable context of discourse. Depending on specific research purposes, the expected affinity metric can be modified to reflect better prevailing standards and norms in the appropriate environmental context.

The use of translated materials, except for SLA communications, also should be expected to affect findings. No matter how much fidelity is assumed in translated materials, the cultural and linguistic nuances present in native language

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communications can be lost, altered, or distorted in a translation. This study used translations bearing a high degree of fidelity, yet idioms, colloquialisms, and subtleties were most assuredly tempered, yielding a series of findings reasonably expected to be at variance with findings generated through use of native-language texts. Transitioning content dictionaries to appropriate native tongues, then ensuring a high degree of suitability through review by native speakers, will also help preserve much of the emotional content likely lost in translated materials.

Action coding

The symbolic content of terrorist attacks is, in the absence of confirmation of intent from the terrorists themselves, rather speculative. Even taking the message recipient's perspective, the measure of impact is subjective. How an individual interprets an act of terror depends on a host of other factors affecting how and when the act was perceived, the emotional and intellectual impact other attacks may have had, the degree to which the act's impact on others might diffuse to third parties, even emotional stability and mood at the time of perception. Inferred and intended symbolism, consequently, may diverge widely. Even then, perceptions of symbolic content may vary in the same individual over time. Given the subjectivity and variability of interpreting or inferring symbolic content, detailed case studies can allow coding modifications, where necessary, based on past reactions to terrorist violence. In instances where there is no relevant history of terrorism, frequent coding revisits may be necessary. The record of any revisions, however, will add important data, booting confidence in coding reliability for that particular context.

Non-violent Acts

Some terrorist groups include non-violent acts in their repertoires, adding an additional element through which the thoughts and actions of intended audiences might be modified and guided. Hamas, for example, built a foundation of support by providing essential services to the people of Gaza, services that the Israelis would not and the Palestinian Authority could not deliver. Hamas has a long history of establishing schools, health clinics, and social welfare offices, primarily in Gaza, for the benefit of its targeted audience. When these services are not otherwise provided, as is the case in Gaza, the organization responsible enjoys a tremendous advantage over real and potential rivals for public sympathy, support, and loyalty. The Symbionese Liberation Army sought to affect similar programs, demanding extensive food distribution efforts in exchange for the release of Patricia Hearst, but unrealistic expectations, poor foresight and planning, and poor preparations by both the SLA and authorities doomed the effort from the start. The RAF never did affect public service efforts, relying instead on the simple message of violence and the more convoluted message in its ideological pronouncements to convey its messages. The impact of the intended and inferred symbolic message content in non-violent acts thus offers an exciting avenue for additional research and exploration.

A Fuzzy Future

No terrorist group is tractable; all seek change. Indeed, the rationale of every terrorist group rests in some manner on a demand for, and expectation of, change. For the committed revolutionary, of whatever ideological stripe, radical change is the primary goal, the reason for action. How much change is enough change, however, is

much more difficult to identify, even for the terrorists themselves. How much sympathy and support is needed to evolve and effectively advance the cause is sensitive to contextual, spatial, and temporal differences and thus beyond generalizable predictive capacity. Future development can move expected affinity forward by addressing each of these issues.

Given established traditions in terrorism research, opportunities for such refinement seem quite distant. By bringing newer ideas to bear, and making full use of the tools and techniques developed in other disciplines such as social network analysis, terrorism studies can advance beyond the descriptive and move more firmly into the predictive. Generational-based research offers some opportunities, given its effort to generalize across a range of examples, searching for those potential explanatory factors held in common by the subjects included. Such broadly defined efforts typically lack the depth necessary for determining the subtleties and nuances of an on-going interactive dynamic. The other common approach, in-depth case studies, lacks the generalizability of generational studies, limiting the extent to which any findings might be applied to additional situations. Network-based approaches, while representing the newest approach to the study of terrorism, remain firmly rooted in the structural consideration of networks, leaving the causal factors behind link attachment unaddressed.

Advances in the study of terrorism and of terrorism's dynamics must venture in bold new directions, try new approaches, and risk failure if it is to offer additional insights and understanding. One promising approach that offers the opportunity to bridge the differences between the generational and case study approaches lies in the

field of fuzzy logic (see Zadeh 1965; Kosco 1986; Zadeh and Kacprzyk 1992; Ragin 2000; and Ragin 2008), where variables are not forced into artificial bivalent categories but rather addressed as the multivalent variables they are. Terrorist attacks are not simply severe or not severe, a bivalent approach, but vary across an infinite range of shading of severity, depending on the perspective and orientation of the observer. Weapons choices, while seemingly compatible with discrete categories, also holds considerable variability. The SLA for example, assassinated Oakland school superintendent Marcus Foster using handguns, loaded with bullets containing cyanide. Whether such an act is properly considered a chemical weapon attack is an open question. How to consider an attack using a highly advanced explosive that does little damage and causes few casualties, compared to a crude mixture of fertilizer and fuel oil, like Timothy McVeigh's bomb in Oklahoma City, offers another perspective on the difficulty of categorizing even the seemingly mundane in terrorism studies. When the perspective shifts to that of the observer, potential categories become significantly more difficult to separate. Expected affinity was developed with fuzzy logic applications firmly in mind and is intended to leverage multivalence across a range of factors.

By allowing for ranges of meaning and value across a defined spectrum, terrorism studies such as this one can better harness the smoothness of a host of continuous variables, using degrees of measure rather than a set and limiting series of predetermined values. Adding visualization, and visual analytics, further advance the study of terrorism by providing a ready opportunity to understand findings intuitively,

particularly where data is overwhelming or where results offer few interpretive opportunities or insights.

Terrorism is a highly emotional phenomenon, one for which very little beyond casualty rates and frequency of activities can be easily quantified and operationalized. Disagreements over foundational aspects – such as whether a given act is indeed an act of terrorism – undergird the study of terrorism, leaving the entire field mired in a subjectivity often rejected as unacceptable elsewhere. Subjectivity colors, in one way or another, virtually every study of terrorism in ways that make objective comparison between terrorist groups, terrorism conflicts, or any select aspect difficult. By moving the study of terrorism away from the bivalence of constructed categories and measures into a protocol more amenable to the nuances of a multivalent phenomenon, and by moving it away from a reductionist and structuralist perspective into a network-centric system perspective, the discipline can be advanced in ways unimagined a few years ago. This study takes a first, small step along that path, taking the prudent approach of asking whether this direction is a feasible one to pursue. While the goal of greater insight may be years distant, this study demonstrated the opportunity that lies in developing a new approach to the study of terrorism.

Appendix

Statements and Communiqués Used in Analysis

Islamic Resistance Movement (Hamas)
Statements and Communiqués

1998

27 Oct "The Wye River Memorandum of 23 October 1998: Its Indications
        and Consequences"
17 Dec "Condemnation Alone is Not Enough"

1999

2 Feb   "Sparing the Palestinian Blood is a Responsibility of the Palestinian
        Authority"
20 Mar "Press Release"
5 May   "The Zionist Enemy Continues Campaign of Settlement and
        Judiazation: The Palestinian Authority Arrests the Nobles"
18 May "A New Terrorist Assumes Power in the Zionist State"
5 Jun   "Latent Elements of Victory Waiting to be Stirred"
22 Sep "An Open Message from Khaled Mishaal to the Jordanian Monarch"
22 Sep "Press Release on the Arrest of the Movement's Leaders: Khaled
        Mishaal, Ibrahim Ghoushe, and Deportation of Dr. Mousa Abu
        Marzouk"
31 Oct "Statement on Mauritania's Promotion of Full Diplomatic Ties with
        the Zionist Regime"
2 Nov   "A New Conspiracy at Oslo Summit"
9 Nov   "Press Release: The Arrest of Ezzat Rasheq"
24 Nov "Statement: Deportation of Hamas Leaders"
30 Nov "Press Statement: The Arrest of Several National Figures by the
        Palestinian Authority"
2 Dec   "Statement on the Wicked Assault Against Dr. Muaweya al-Masri"
8 Dec   "Zionists are Our Enemies, Jihad is Our Way to Freedom"

2000

3 Feb   "Press Statement by Hamas Concerning the Stockholm Conference
        on the Alleged Holocaust of the Jews"
5 Feb   "Statement on the Recent Meeting Between Barak and Arafat and

	on the Resolution of the Central Council on the Declaration of a State Next September"
9 Feb	"Press Statement on the Treacherous Acts of Zionist Aggression Against Lebanon"
25 Feb	"The Wave of Arrests of Mujahideen Will Only Increase the Fighters' Determination to Continue Their Resistance, and on the Threats of the Zionist Entity's Leadership Against the People of Lebanon, its Land and Children"
27 Feb	"Press Statement Concerning the Palestinian Authority's Campaign of Arrests of Bir Zeit University Students"
10 Mar	"The So-Called Breakthrough in the Zionist-Palestinian Talks, a New Deception"
11 Mar	"Declaration Concerning the Arab Foreign Ministers' Meeting in Beirut"
9 Apr	"New Wave of Arrests Takes Place in Jenin and Nablus by PA Security Apparatus"
10 Apr	"Press Statement Concerning a Fabricated News Report Carried by Reuters"
17 Apr	"Statement by Khaled Mishaal, Hamas Political Bureau Chief, to the Palestinian People and the Arab and Muslim Ummah on the Occasion of the Palestinian Prisoner's Day – 17 April"
21 Apr	"Urgent Appeal to Our People and Ummah to Back the Heroic Detainees and Adopt Their Cause."
3 May	"Urgent Press Release"
14 May	"On the Anniversary of the Establishment of the Usurping Zionist Entity"
15 May	"Congratulations to Our People Over the Release of the Mujahid Leader Salah Shehade"
15 May	"On the Anniversary of the Nakba and for the Sake of Detained Heroes"
15 May	"The PA Commits Another Crime by Arresting the Mujahid Commander Mohammed Daif"
24 May	"Today Lebanon . . . Tomorrow Palestine"
4 Jul	"Press Release by Hamas on Results of the PLO Central Council Meeting"
10 Jul	"The Doomed Camp David Summit"
15 Jul	"There is No Justification for Arab and Islamic Silence towards the Camp David Conspiracy"
23 Jul	"Urgent Statement by Hamas: Palestine and al-Quds are the Sole Property of the Nation"
27 Jul	"All Conspiracies Crash at the Gates of al-Quds"
30 Jul	"Press Statement on the Arrest of Dr. Abdul Aziz Ranteesi by PA Security Men"
3 Aug	"Press Release on Arafat's Statements Surrendering the Buraq Wall to the Jews"
7 Aug	"Hamas Comments on Statements by Jewish Rabbi Ovadia

	Yossef"
10 Aug	"Important Appeal to the Arab and Islamic Nation: Al-Quds is in Danger"
16 Aug	"Press Release Commenting on the Assassination of the Mayor of Sarda Village, Mohmoud Abdullah, at the Hands of the Zionist Occupation Soldiers"
19 Aug	"Our Souls and Blood will be Sacrificed for the Aqsa"
27 Aug	"Heroic Battle by Mujhaid Mahmoud Abu Hannoud Against Zionist Occupation Forces"
2 Sep	"Trial of Majahid Mahmoud Abu Hannoud: Shameful Spot in Records of the Palestinian Authority"
27 Sep	"Statement on Terrorist Sharon's Declared Intention to Visit the Haram al-Sharif"
29 Sep	"New Massacre by Enemy Forces Against Our Unarmed People in the Aqsa Plaza"
29 Sep	"Hamas Calls for an All-Out Strike and Popular Confrontations Tomorrow, Saturday, and for Three-Day Mourning for the Souls of the Martyrs"
1 Oct	"Communiqué no. 4: Let the Aqsa Intifada Continue and let the Confrontation Progress and let the Ground Turn into Fire and Volcanoes Under the Feet of the Usurpers"
3 Oct	"Communiqué no. 5: Jihad is Our Way. . . and Death for the Cause of Allah is Our Noblest Goal"
4 Oct	"Communiqué no. 6: The Seventh Day of the Aqsa's Intifada"
7 Oct	"Communiqué no. 7: Blood of Martyrs Hoists the Palestinian Flag over the Dome of the Rock"
7 Oct	"The Holy Aqsa Intifada: Statement on the Occupation's Defeat at Mosque of Yousef's Tombstone in Balata"
8 Oct	"The Holy Aqsa Intifada: From Lebanon to Palestine. . . One People Who Do Not Capitulate"
9 Oct	"The Holy Aqsa Intifada Communiqué no. 8: Herds of Armed Settlers Backed by Enemy Soldiers Attack Our People Everywhere"
12 Oct	"The Holy Aqsa Intifada Communiqué no. 9: Our Mujahid People Do Not Fear Warplanes, Missiles, or the Enemy's Nuclear Arsenal"
14 Oct	"The Holy Aqsa Intifada Communiqué no. 11: Statement on the PA's Approval to Attend the Sharm al-Sheikh Summit with Criminal Barak"
14 Oct	"The Holy Aqsa Intifada Communiqué no. 10: Press Release"
15 Oct	"Statement on the Jews' Attempt to Lay Down the Foundation Stone of the Alleged Temple Tomorrow on the Date of the Notorious Sharm al-Sheikh Summit"
15 Oct	"The Holy Aqsa Intifada: Appeal to Support the Aqsa"
17 Oct	"Hamas Rejects Sharm al-Sheikh Resolutions"
25 Oct	"Press Release Commenting on Terrorist Barak's Plan the

	Segregate and Isolate Palestinian Areas, and Clinton's Invitation to both Arafat and Barak to Meet Him"
26 Oct	"The Holy Aqsa Intifada Communiqué no. 12: The Intifada Will Persist"
31 Oct	"More Escalation, Confrontations, and Days of Rage"
2 Nov	"The Holy Aqsa Intifada Communiqué no. 13: Whatever was Taken by Force Would Only be Regained by Force"
2 Nov	"Press Release Issued by the Islamic Resistance Movement – Hamas"
9 Nov	"The Holy Aqsa Intifada Communiqué no. 14: The Intifada Will Persist Until al-Quds is Liberated"
12 Nov	"An Appeal from Sheikh Ahmed Yassin, Founder of the Islamic Resistance Movement, Hamas, to Leaders and Peoples of the Arab and Islamic Nation on the Occasion of Holding the Islamic Summit Conference in Doha"
21 Nov	"The Holy Aqsa Intifada Communiqué no. 15: The Intifada Will Persist Until End of Occupation"
23 Nov	"Press Release on the Zionist Assassination of Mujahid Ibrahim Abdul Karim, One of the Qassam Brigades' Commanders"
27 Nov	"The Month of Ramada. . . the Month of Seeking Ta'at and Closeness to Allah through Jihad and Escalation of Resistance"
27 Nov	"Press Release on the Assassination of the Five Hamas Elements in Qalqilya"
2 Dec	"The Holy Aqsa Intifada: An Intifada to Defeat Occupation. Communiqué no. 16"
9 Dec	"Press Release: The Islamic Resistance Movement, Hamas, Announces the Martyrdom of Hamdy Arafat Ansyo, Commander of the Teyba Operation and Marine Rafah Martyrdom Operation"
10 Dec	"Here is the Truth. . .Let the World Listen"
13 Dec	"Press Release: The Mujahid Dr. Abdul Aziz Ranteesi Declares a Hunger Strike"
13 Dec	"Press Release on the New Massacre in Khan Younis"
15 Dec	"Press Release: The Declaration of Resumption of Negotiations Between the PA and Zionist Camp"
14 Dec	"Holy Aqsa Intifada Communiqué no. 17: On the Anniversary of its Outbreak; Hamas – Resistance Until Victory"
16 Dec	"Press Release: Martyr Hero Noor Mohammed Safi, Martyr of the Hamas Anniversary"
26 Dec	"Our Eid is Decorated with Revenge"
31 Dec	"Press Release on the Assassination of Fatah Official and the Heroic Operation Against Kach Leader"

2001

4 Jan	"Important Communiqué by the Islamic Resistance Movement (Hamas) on PA's 'Conditional!' [sic] Approval of the American Proposals and the Arab Follow-up Committee's Cairo Meeting to Discuss Them"
7 Jan	"Press Release on the Security Coordination Meeting Between the PA and Zionist Enemy in Cairo"
15 Jan	"Communiqué by Qassam Brigades (Special Unit 103): The First Reprisal Against Assassinations"
21 Jan	"Military Communiqué Issued by Qassam Brigades Unit "103": Retaliation to Kidnapping Palestinian Girl"
21 Jan	"Communiqué no. 19: Taba Negotiations Will Not Deceive Our People and Will Not Halt Resistance or the Intifada"
28 Jan	"Military Communiqué by the Qassam Brigades Unit 103: Retaliation to the Killing of Two of Our People in Rafah"
1 Feb	"Hamas Statement Commenting on PA Officials' Calls Asking Our People in Occupied Palestine 1948 to Elect Criminal Barak"
13 Feb	"Press Release: On the Escalation of Terrorism and Assassination Against Our Mujahid People"
22 Mar	"Military Communiqué Issued by Qassam Brigades for Shelling . . . and Zionists Will Not Go Unpunished"
27 Mar	"Press Release: Zionists Commit a New [Wave] of Crime"
27 Mar	"Memo from the Islamic Resistance Movement, Hamas, to the Arab Summit in Amman, Jordan"
27 Mar	"Qassam Brigades Military Communiqué"
3 Apr	"Hamas Communiqué: Assassinating Mujahid Mohammed Abdel Aal: New Cowardly Crime by Coward People"
6 Apr	"Hamas Communiqué: The Criminal Terrorist Sharon Provokes the Nation in its Religion and Desecrates its Holy Shrines"
10 Apr	Hamas Communiqué: The Aqsa is Appealing to You . . . Will Anybody Respond?"
11 Apr	"Hamas Communiqué: On the Martyrdom of Fadi Atallah Yousef Amer"
11 Apr	"Hamas Communiqué: Zionist Criminals Demolish Houses on its [sic] ,Inhabitants"
16 Apr	"Hamas Communiqué: ON the Zionist Aggression Against Syrian Military Positions in Lebanon"
19 Apr	"Press Release on the Serious Injury of One of the Movement's Mujahideen"
18 Apr	"Qassam Brigades Military Communiqué"
27 Apr	"Qassam Brigades Military Communiqué"
1 May	"Hamas Communiqué: Dangerous Stage in Zionist Aggression Against Our People"
12 May	"Hamas Communiqué: Support Our People's Intifada"
15 May	"Hamas Communiqué: On the Anniversary of the Ursurpation of

	Palestine"
4 Jun	"Qassam Brigades' Military Communiqué"
5 Jun	"Qassam Brigades' Military Communiqué"
5 Jun	"Press Clarification"
5 Jun	"Hamas Communiqué"
13 Jun	"Hamas Press Statement on PA's Acceptance of George Tenet's Proposals"
14 Jun	"Hamas: Political memo on Western/American Pressures"
16 Jun	"Hamas Urgent Press Release"
19 Jun	"Memo on Jordanian Authorities' Insistence on Detaining Brother Ibrahim Ghoushe in Amman Airport"
20 Jun	"Press Release on the Health Condition of Eng[ineer] Ghoushe Detained in Amman Airport"
22 Jun	"Qassam Brigades' Military Communiqué"
23 Jun	"Hamas Press Release"
24 Jun	"Urgent Press Release on Developments of Mr. Ibrahim Ghoushe's Case"
28 Jun	"Press Release on the Return of Mr. Ibrahim Ghoushe"
30 Jun	Press Release on the Post of Mr. Ibrahim Ghoushe in Hamas"
1 Jul	"Press Release on the Return of Mr. Ibrahim Ghoushe"
2 Jul	"Press Release on the Israeli Aggression Against Lebanon and Syria"
8 Jul	"Military Communiqué Issued by the Qassam Brigades"
13 Jul	"Qassam martyrdom of Atef Mohammed Tafesh"
13 Jul	"Military Communiqué Issued by the Qassam Brigades"
17 Jul	"Hamas Communiqué on Zionist Massacre in Bethlehem"
19 Jul	"Hamas Communiqué on Zionist Aggression"
24 Jul	"Press Release: Occupation Crimes Against Our People Continue"
28 Jul	"Hamas Communiqué on Zionist Plans to Desecrate al-Aqsa"
31 Jul	"Hamas Communiqué on the Nablus Massacre"
31 Jul	"Hamas Communiqué: On the Nablus Massacre – Our Condolences Will be in Revenge"
31 Jul	"Hamas Communiqué: ON the Nablus Massacre – Qualitative Leap in the Struggle"
9 Aug	"Military Communiqué Issued by the Qassam Brigades"
20 Aug	"Hamas Communiqué: To Confront Sharon's Massacres"
5 Sep	"Qassam Brigades' Military Communiqué"
18 Sep	"Hamas Communiqué on American and International Moves"
26 Sep	"Qassam Brigades' Communiqué"
28 Sep	"Hamas Communiqué on the Anniversary of Aqsa Intifada"
2 Oct	"Qassam Brigades Communiqué"
3 Oct	"Hamas Appeal"
14 Oct	"Qassam Brigades Communiqué"
15 Oct	"Hamas Communiqué"
19 Oct	"Hamas Communiqué"
21 Oct	"Hamas Communiqué"

23 Oct	"Qassam Brigades Communiqué"
24 Oct	"Hamas Communiqué on the Massacre"
26 Oct	"Qassam Communiqué"
3 Nov	"Hamas Communiqué on American Offensive"
13 Nov	"Hamas Communiqué on Sharon and Peres Plan"
24 Nov	"Hamas Communiqué of the Assassination o Abu Hannoud by Zionist Occupation"
24 Nov	"Qassam Communiqué"
26 Nov	"Qassam Communiqué"
25 Nov	"Hamas Communiqué"
27 Nov	"Qassam Communiqué"
2 Dec	"Qassam Communiqué"
4 Dec	"Hamas Communiqué"
11 Dec	"Hamas Press Release on EU Foreign Ministers' Statement"
11 Dec	"Hamas Press Release on Powell's Statement"
12 Dec	"Qassam Communiqué"
17 Dec	"Hamas Communiqué on Arafat's Speech"
21 Dec	"Qassam Communiqué"
17 Dec	"Hamas Communiqué"
21 Dec	"Hamas Communiqué"
23 Dec	"Hamas Communiqué Condemns Attack on Journalist"
27 Dec	"Hamas Communiqué on Secret Negotiations"

2002

8 Jan	"Hamas Communiqué"
9 Jan	"Qassam Communiqué"
12 Jan	"Hamas Communiqué"

Red Army Faction Communiqués and Statements

1970s

1 Apr 1971	"The Urban Guerrilla Concept"
14 May 1972	"For the Victory of the People of Vietnam"
16 May 1972	"Commando Thomas Weisbecker"
20 May 1972	"Expropriate Springer"
20 May 1972	"Fight Fascism"
25 May 1972	"Attack on the American Armed forces Headquarters"
28 May 1972	"Communiqué to the West German Press"
29 May 1972	"About the Fascist Bomb Threats in Stuttgart"
1972 – 1973	"Ulrike Meinhof Writes from the Dead Wing" [compilation of Meinhof's prison writings between 16 June 1972 and 9 February 1973]

13 Sep 1974	"Statement Regarding the Freeing of Andreas Baader"
31 Oct 1974	"Holger Meins' Last Letter"
24 Apr 1975	"Statement of Commando Holger Meins"
18 Jun 1975	"Andreas Baader's Statement at the Stammheim Trial"
4 May 1976	"History of the Federal Republic of Germany and the Old Left: Fragment from an Intervention in the Stammheim Trial"
11 May 1976	"Fragment Regarding Structure"
11 May 1976	"Statement of Jan-Carl Raspe at the Trial in Stuttgart Stammheim"
July-August 1976	"The Structure of the RAF"
July 1976	"Interview with *Le Monde Diplomatique*"
Late 1976	"The October Revolution and the Third International: Summary of the Discussion in Stammheim in 1976"
8 Aug 1977	"Statement Regarding the Execution of Ponto"
3 Sep 1977	"The RAF Attack on the Federal Prosecutor's Office in Karlsruhe"
6 Sep 1977	"Second Communiqué Regarding the Schleyer Kidnapping"
13 Oct 1977	"Ultimatum"
13 Oct 1977	"Final Communiqué Regarding Schleyer"
13 Oct 1977	"Operation Kofr Kaddum" [regarding PFPL hijacking in support of RAF prisoners]
25 Jun 1979	"Haig Assassination Attempt"

1980s

6 Feb 1981	"RAF Hunger Strike Statement"
31 Aug 1981	"Attack on the USAFE in Ramstein"
May 1982	"The Guerrilla, the Resistance, and the Anti-Imperialist Front"
Dec 1984	"Statement Regarding the Association of Political Prisoners"
Dec 1984	"Hunger Strike Statement"
Jan 1985	"For the Unity of Revolutionaries in West Europe"
1 Feb 1985	"RAF Attack Against Ernst Zimmerman"
Mid-Feb 1985	"The Prisoners' Statement Regarding the End of the Hunger Strike"
Apr 1985	"Interview with Comrades from the RAF"
8 Aug 1985	"RAF and Action Directe Attack Against the Rhein-Main Air Base: Communiqué # 1"
25 Aug 1985	"Communiqué # 2: Regarding the Action Against the Rhein Main Air Base and the Shooting of Edward Pimental"
Sep 1985	"Interview with Comrades from the RAF"
Jan 1986	"To Those Who Struggle Alongside Us"
9 Jul 1986	"Attack on Beckurts"
10 Oct 1986	"On the Attack Against Braumöhl"
Sep 1988	"Statement of the Red Brigades and the RAF"

20 Sep 1988	"RAF Attack on Hans Tietmeyer"
1 Feb 1989	"Hunger Strike Statement by Helmut Pohl on Behalf of Political Prisoners in West Germany"
Early Feb 1989	"To the Revolutionary Prisoners in the Imperial Prisons of Western Europe"
Mid-May 1989	"Statement by Karl-Heinz Dellwo"
20 May 1989	"Statement by Eve Haule"
2 Dec 1989	"Assassination of Alfred Herrhausen"

1990s

4 Apr 1991	"Rohwedder Assassination"
18 Jan 1992	"Letter from Günter Sonnenberg, RAF Prisoner"
24 Jan 1992	"Red Army Faction Communiqué re: Nonne"
10 Apr 1992	"To All Who are Looking for Ways to Organize and to Push Through a Human Life in Dignity Here and Worldwide on Really Concrete Issues"
15 Apr 1992	"Statement by Irmgard Möller Regarding the RAF Cease Fire"
18 May 1992	"*Der Spiegel* Interview with Irmgard Möller"
June 1992	" 'They Want to Destroy Us,' Interview with RAF Prisoners Lutz Taufer, Karl-Heinz Dellwo, and Knut Folkerts" [from *Konkret*, a magazine devoted to leftist theory]
20 Jun 1992	"There is Much that United Us"
29 Jun 1992	"Greetings to All Those Taking Part in Demonstrations and Congress Against the World Economic Summit in Munich!"
Aug 1992	"We Must Search for Something New"
Sep 1992	"Christian Klar's Trial Statement"
30 Mar 1993	"Statement Concerning the Attack on Weiterstadt Prison"
29 Jun 1993	"A Letter from Birgit Hogefeld"
30 Jun 1993	"Witness Statement Regarding the Shooting of Wolfgang Grams"
22 Jul 1993	"The Treason of Klaus Steinmetz"
15 Jun 1996	" 'Now We Must Find Ways to be Released. . . ' Interview with Political Prison Helmut Pohl on the Politics of the Red Army Faction (RAF)"
Mar 1998	" 'The Urban Guerrilla is History . . .' The Final Communiqué of the Red Army Faction (RAF)"

Symbionese Liberation Army Statements and Communications

1973	"A Letter to the People from Fahizah, to Those Who Would Bear the Hopes and Future of the People . . ."

1973	"The Goals of the Symbionese Liberation Army"
21 Aug 1973	"The Symbionese Federation and the Symbionese Liberation Army Declaration of Revolutionary War and the Symbionese Program"
6 Nov 1973	"Symbionese Liberation Army Western Regional Youth Unit Communiqué # 1" [warrant order for Marcus Foster assassination]
4 Feb 1974	"Symbionese Liberation Army Western Regional Adult Unit Communiqué # 3" [warrant order for Patricia Hearst kidnapping]
12 Feb 1974	transcript of tape recording received by Berkeley, California radio station KPFA
19 Feb 1974	transcript of tape delivered to Reverend Cecil Williams
Mar 1974	"Codes of War of the United Symbionese Liberation Army"
3 Apr 1974	transcript of tape received by San Francisco, California radio station KSAN
24 Apr 1974	transcript of tape addressed to WAPAC, but delivered to a private citizen
13 Aug 1975	"Communiqué" [delivered under the name of New World Liberation Front]
1975	transcript of toilet message warning

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