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THESIS

COLLABORATIVE NETWORK EVOLUTION: THE LOS ANGELES TERRORISM EARLY WARNING GROUP

by

Sunchlar M. Rust

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Thesis Advisor: Erik Jansen
Second Reader: Robert O'Connell

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13. ABSTRACT (maximum 200 words)

This study bridges the narrow divide between collaboration theory and networking and views organizations as a source of collaborative processes. Social network analysis is applied to determine how the Los Angeles Terrorism Early Warning Group (TEW) evolved from a small group of actors to a diverse, county-wide network bridging public-private, local-state-federal, and functional divides. The TEW demonstrates an example of organizational problem solving where a network facilitated collaboration in a wickedly complex and uncertain environment. The network's consensus-based innovation, collaborative processes, and meta-leadership helped the network evolve. These factors strengthened the collaborative ethos of the network and set the stage for success as the network meets current and future challenges. The TEW's bottom-up, consensus-based network expansion contrasts sharply with top-down collaborative approaches, such as the creation of the National Counterterrorism Center and Department of Homeland Security. Lessons from the TEW's well-paced evolution provide insight into how to facilitate collaborative action and build collaborative capacity for the future.

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COLLABORATIVE NETWORK EVOLUTION:
THE LOS ANGELES TERRORISM EARLY WARNING GROUP

Sunchlar M. Rust
Major, United States Air Force
B.S., United States Air Force Academy, 1992

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March 2006

Author: Sunchlar M. Rust

Approved by: Dr. Erik Jansen
Thesis Advisor

Dr. Robert O'Connell
Second Reader/Co-Advisor

Dr. Gordon McCormick
Chairman, Department of Defense Analysis

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ABSTRACT

This study bridges the narrow divide between collaboration theory and networking and views organizations as a source of collaborative processes. Social network analysis is applied to determine how the Los Angeles Terrorism Early Warning Group (TEW) evolved from a small group of actors to a diverse, county-wide network bridging public-private, local-state-federal, and functional divides. The TEW demonstrates an example of organizational problem solving where a network facilitated collaboration in a wickedly complex and uncertain environment. The network's consensus-based innovation, collaborative processes, and meta-leadership helped the network evolve. These factors strengthened the collaborative ethos of the network and set the stage for success as the network meets current and future challenges. The TEW's bottom-up, consensus-based network expansion contrasts sharply with top-down collaborative approaches, such as the creation of the National Counterterrorism Center and Department of Homeland Security. Lessons from the TEW's well-paced evolution provide insight into how to facilitate collaborative action and build collaborative capacity for the future.

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I. INTRODUCTION

On April 18, 1775, two messengers rode parallel routes from Charleston to Lexington, Massachusetts to warn Patriot leaders in towns along the way of approaching British troops. Paul Revere arrived in Lexington a half hour before the other rider, William Dawes, and was the first to warn John Hancock and Samuel Adams. Revere was not only quicker to the punch, but also more effective.[1] In *The Tipping Point*, Malcolm Gladwell describes Revere as the "man with the biggest Rolodex in colonial Boston" who knew exactly who to notify in each town. Messages from the less well-connected Dawes, on the other hand, failed to generate as much traction as "not one person from any of those towns made it to the first day of fighting."[2] Not surprisingly, disseminating and acting upon information quickly remains critical to threat response today, especially in counterterrorism. Even President Bush highlights the importance of getting information out, as Revere did, to "the right people…in the right places."[3] In essence, knowledge becomes power in the hands of those with the know-how to use it effectively.

In order to deal with the problem of terrorism—from prevention and detection to incident response—a diverse pool of organizations must act. The problem is an example of what Laurence O'Toole describes as a "wicked problem" which cannot be handled by dividing requirements into "simple pieces in near isolation from each other." Based on that, O'Toole concludes that "policies dealing with ambitious or complex issues are likely to require networked structures."[4] At the national level, some organizations have moved in that direction. A myriad of organizational changes yielded the Department of Homeland Security, US Northern Command, and a wellspring of terrorism-specific offices and inter-organizational coordinating groups in federal agencies and departments.

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[1] Rod Paschall, ed., "Paul Revere's True Account of the Midnight Ride," *Military History Quarterly*, Summer 2003. [journal online]; available from http://www.thehistorynet.com/mhq/blmidnightride/. Internet; accessed 1 Feb 06.

[2] Malcolm Gladwell, *The Tipping Point* (UK: Back Bay Books, 2000), 23.

[3] George W. Bush, *State of the Union Address*. Available from http://www.whitehouse.gov/news/releases/2003/01/20030128-19.html. Internet; accessed 1 Feb 06.

[4] Laurence J. O'Toole, "Treating Networks Seriously," *Public Administration Review* 57, No. 1 (1997): 45-52. ProQuest; accessed 1 Feb 06. O'Toole attributes the "wicked problem" term to Rittel and Webber, "Dilemmas in General Theory of Planning," *Policy Sciences* 4 (1984).

At the national level, the complexity of the problem is certainly apparent. Below that, states and localities have attempted to parse the problem and focus their preparedness and response somewhat to geographic areas of responsibility; however, most terrorism-related issues still require inter-organizational coordination outside local jurisdictions.

Los Angeles (LA) was among the first of the metropolitan areas to rise to the challenge when it embarked on a pioneering inter-organizational counterterrorism approach. From its initiation in preparation for the 1984 Los Angeles Summer Olympics and later founding of the Los Angeles Task Force on Terrorism (LATFOT) to its present structure as the Los Angeles County Terrorism Early Warning Group (TEW), the organization implemented a networked approach to counterterrorism which is now emulated throughout the United States.[5]

Although it is difficult to quantify counterterrorism success, in the case of the TEW, the organization has been assessed as a qualified success according to Program Logic Model criteria. This model compares an organization's activities with its stated operational objectives; it assumes that successful organizations synchronize their activities with their objectives.[6] Beyond its assessed objective "success" according to that model, what is not known is *how* it evolved as a collaborative network.

The objective of this study is to answer this question in terms of the focal organization—the TEW, then apply the findings to other counterterrorism efforts. The first two chapters set the stage to answer this question. Chapter II surveys existing literature and reviews the need for inter-organizational collaboration, especially at the local level. This chapter also provides a foundational look at network theory. Chapter III introduces social network analysis (SNA) techniques that are used in the methodology for this study. Following that, SNA is used to map the growth of the TEW specifically. In

[5] Ronald Iden, Testimony before the House Committee on Government Reform, Subcommittee on Government Efficiency, Financial Management and Intergovernmental Relations. Available from http://www2.fbi.gov/congress/congress02/iden032802.htm. Internet; accessed 1 Feb 06.

[6] Michael Grossman, *Perception or Fact: Measuring the Performance of the Terrorism Early Warning (TEW) Group* (Monterey: Naval Postgraduate School, 2005). LA County Sheriff Department Commander Grossman applied a Program Logic Model to verify linkages between the TEW's organizational objectives and its activities and determined the TEW to be a "success." Commander Grossman's thesis provides the starting point for this study.

the final chapter, observations from the TEW case are extrapolated to broader inter-organizational collaboration and network theory.

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II. THE INTERAGENCY COLLABORATION PROBLEM

This chapter surveys the literature to reveal the need for research on the evolution of collaborative networks. Although many studies address how the process of cooperation begins, far fewer discuss what happens after cooperative frameworks develop. A cursory review of the problem and current research on interagency cooperation sets the stage for more in-depth analysis of the limits of current theory and the need for research on *how* organizations collaborate over time.

A. BARRIERS TO PUBLIC SECTOR COLLABORATION

Ironically, part of the interagency coordination problem faced by the public sector stems from the inherent design of American government. James Wilson notes that the separation of powers, originally intended to balance the branches, creates a fragmented and often chaotic government.[7] In addition to the notion of separation of powers, Eugene Bardach cites federalism and the "American ethos of pluralist democracy" to explain why neighboring communities often form specialized, mutually exclusive governmental structures to deal with public problems, despite the fact that the problems transcend geographic boundaries.[8] American institutions are--by design--not optimized for quick, coordinated action on complex issues. This built-in institutional quirk applies not only at the national level, but also at state and local levels.

After 9/11, however, numerous reports and executive orders officially called for cooperation to overcome challenges created by parochial organizational mindsets. The Homeland Security Information Security Act states, "all appropriate agencies shall share homeland security information with federal agencies and appropriate state and local personnel."[9] To achieve this goal, new organizations and interagency committees were established to enable cooperation at all levels of government. The problem of inter-

[7] James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* **(**New York: Basic Books, 1989), 376.

[8] Eugene Bardach,. *Getting Agencies to Work Together: The Practice and Theory of Managerial Craftsmanship* (Washington, DC: Brookings Institution Press, 1998), 11.

[9] US GAO, *Combating Terrorism: Interagency Framework and Agency Programs to Address the Overseas Threat*, GAO Report GAO-03-165 (Washington: GPO, 23 May 2003), 53.

organizational cooperation regarding terrorism, however, is no small task, given the "30,000 units of local government, 18,000 local police organizations, 30,000 fire departments, 3,400 county governments" and countless other organizations involved in counterterrorism and emergency response.[10] Even when some of those localities coordinate, the risk of duplication of effort remains.

In addition, if organizations overcome cultural and political biases and actually *want* to coordinate, technical barriers may still impede collaboration. President Bush's 2004 Executive Order Strengthening the Sharing of Terrorism Information to Protect Americans calls for improvements in information dissemination, declassification and compartmentalization to enable better collaborative efforts across agencies' boundaries and through federal, state and local levels of government.[11] Information flow between national agencies and states and localities (both up and down) remains troublesome. A 2003 Markle Foundation Task Force report recommends improved government networking.

> The sharing of terrorist-related information between relevant agencies at different levels of government has been only marginally improved in the last year, and remains haphazard and still overly dependent on the ad hoc 'sneaker net' of personal relations among known colleagues.[12]

An effective network linking federal, state and local government and coordinating on homeland security may be needed; however, details on how best to achieve such a network remain undetermined.

[10] William V. Pelfrey, "The Cycle of Preparedness: Establishing a Framework to Prepare for Terrorist Threats," *Journal of Homeland Security and Emergency Management* 2, No. 1 (2005). Available at http://www.bepress.com/jhsem/vol2/iss1/5. Internet; accessed 8 Jul 05.

[11] George W. Bush, *Executive Order Strengthening the Sharing of Terrorism Information to Protect Americans*, 27 Aug 04 Press Release. Available at http://www.whitehouse.gov/news/releases/2004/08/print/20040827.html. Internet; accessed 8 Jul 05.

[12] Markle Foundation Task Force. *Creating a Trusted Information Network for Homeland Security*, December 2003: 2. Available at http://www.markle.org/markle_programs/policy_for_a_networked_society/national_security/projects/taskforce_national_ security.php#report1. Internet; accessed 5 Nov 05.

B. INTRICACIES OF LOCAL SECURITY COOPERATION

The complex problem of local cooperation provides fertile ground for research. H. George Frederickson suggests that studies of metropolitan-level cooperation, in particular, shed light on the difficulties of inter-organizational coordination. Frederickson notes that at the local level

> one can find most of the features of the disarticulated state—the declining salience of jurisdiction, the fuzziness of borders, a growing asymmetry in the relationship between the governed and those who govern, and an erosion of the capacity of the jurisdiction to contain and, thereby, manage complex social, economic, and political issues.[13]

Given that, he concludes "the metropolitan area is the best empirical referent" for understanding inter-organizational aspects of public administration.[14] Bardach compliments this argument by emphasizing how limited resources drive collaboration, especially between localities. In cases where problems are cross-jurisdictional, solutions necessitate collaboration to save precious resources and increase efficiency. Such collaboration creates "economies of scale" where funds spent on emergency services, for example, may be pooled in support of several localities.[15] In addition, beyond the issue of resources, because many problems are "bigger than any single organization, collaborating with other organizations is necessary if there is any hope of making progress."[16]

Despite seemingly logical reasons for collaboration, interagency cooperation has not come easily. In many cases, less than optimal structures are being used to achieve interagency collaboration on homeland security.

> Collaboration for homeland security is occurring in the context of under-designed institutional relationships. Leaders and interagency collaborative teams must therefore work to create novel processes, systems, protocols, and networks. They are faced with tasks of overcoming likely institutional barriers resulting from unique and partially conflicting missions, goals and

[13] H. George Frederickson, "The Repositioning of American Public Administration," *Political Science and Politics* 32, No. 4 (Dec 99): 707. JSTOR; accessed 3 Nov 05.

[14] Frederickson, 707.

[15] Bardach, 12.

[16] Jorg Raab and H. Brinton Milward, "Dark Networks as Problems," *Journal of Public Administration Research and Theory* 13, No. 4 (Oct 03): 413-414.

> incentives, and they need to facilitate and enable organizational collaboration through processes we have categorized in an interagency design framework**.**[17]

Down the road, organizations embarking on cooperative frameworks must determine *how* to build and sustain momentum for inter-organizational collaboration.

Naim Kapucu argues that a process perspective on collaboration is useful, especially in the realm of terrorism and emergency response management. Kapucu follows post-9/11 emergency response and recovery cooperation between public and private sector organizations. Kapucu follows Grossman's arguments on the need for cooperation and collaboration in counterterrorism and notes the importance of trust and the development of relationships between organizations over time. He suggests that organizational interdependencies are well documented. Beyond well-documented budgetary and resource interdependency issues, Kapucu says more research is needed on "organizational adaptation over time in dynamic environments."[18] Such research, in turn, compliments theories on conditions under which cooperation and collaboration begin by revealing variables required for collaborative processes to continue and flourish.

C. COLLABORATION THEORY

Various definitions exist for the related terms 'collaboration,' 'cooperation,' and 'coordination.' Although related, different meanings exist between the terms. The focus of this study is on collaboration, beyond mere cooperation or coordination. Bardach defines collaboration as "any joint activity by two or more agencies that is intended to increase public value by their working together rather than separately."[19] Robert Axelrod derived conditions under which cooperation arises—perceptions of continued long-term contact between parties and the belief that cooperation and reciprocation are in their best

[17] Susan Page Hocevar, Gail Fann Thomas, and Erik Jansen, "Building Collaborative Capacity: An Innovative Strategy for Homeland Security Preparedness," *Innovation Through Collaboration: Advances in Interdisciplinary Studies of Work Teams*, Elsevier Series 13, forthcoming 2006.

[18] Naim Kapucu, "Interorganizational Coordination in Dynamic Context: Networks in Emergency Response Management." *Connections* 26, No. 2 (2005): 46. Available at http://www.insna.org/ Connections-Web/Volume 26-2/4.Kapucu.pdf. Internet; accessed 11 Nov 05.

[19] Bardach, 8.

interest.[20] Cooperation and coordination may be requirements for collaboration or be considered key actions as part of inter-organizational collaboration processes; however, the broader concept of collaboration subsumes coordination and cooperation.

With respect to terrorism, Pelfrey defines collaboration as "agencies, organizations, and individuals from many tiers of public and private sectors, working, training, and exercising together for the common purpose of preventing terrorist threats to people or property."[21] Kenneth Thomas's multidimensional approach to conflict management defines collaboration as one of five conflict-handling modes resulting from varying levels of cooperativeness and assertiveness. Collaboration maximizes both assertiveness and cooperation, and it encourages integrative "win-win" solutions. In such situations, the needs of all parties are met to the greatest extent possible. Less than total cooperation yields partial concessions and suboptimal results whereas collaboration optimizes outcomes for all parties. [22]

Several scholars, such as Pelfrey, take the theory one step further to examine not only preconditions and changes from initial collaborative efforts, but also "adaptive processes" which yield varying levels of collaboration over time.[23] Assuming that cooperation and collaboration are voluntary, organizations constantly evaluate whether or not they should continue to cooperate. Of course, organizations make decisions regarding how they should behave or structure themselves based on their environment, making collaboration a dynamic process.

Burton and Obel suggest a definite tie between organizational environment and resulting structure. This theoretical link is applied to the TEW in later chapters. As one of the principle parts of their theory, Burton and Obel note, "The environment-structure imperative indicates that an organization should design its structure in relation to its

[20] Ken G. Smith, Stephen Carroll and Susan Ashford, "Intra- and Interorganizational Cooperation: Toward a Research Agenda," *The Academy of Management Journal* 38, No. 1 (Feb 95): 10.

[21] Pelfrey, 7.

[22] Kenneth Thomas. *Introduction to Conflict Management: Improving Performance Using the TKI* (Palo Alto, CA: CPP, Inc., 2002), 33-36.

[23] Pelfrey, 15.

environment."[24] They describe the environment in terms of four environmental characteristics: equivocality, uncertainty, environmental complexity, and hostility. For them, equivocality means confusion and lack of understanding, including confusion regarding the organization's agenda and cause-effect relationships. Uncertainty involves not knowing the value of an environmental variable related to the organization's processes; for example, not knowing how many widgets to produce or the actual size or degree of the problem the organization is tasked to fix. Complexity relates back to "wickedness" and the interrelatedness of problems. Burton and Obel define it as the number of variables and their interdependency. Hostility describes a situation where the organization's environment threatens its performance or existence; a benign environment with low hostility supports the organization.[25] Given these descriptors, Burton and Obel's hypotheses regarding the effects of environmental factors are applied to the TEW as part of the collaboration analysis. These four characteristics provide a framework for comparing the TEW's environment during different stages of evolution.

Viewed in this light, because environmental factors and the actions of organizations constantly change, collaboration becomes a dynamic process. Hocevar, et al, proposes collaborative capacity as a dynamic measure of collaboration: it is "the ability of organizations to enter into, develop, and sustain inter-organizational systems in pursuit of collective outcomes."[26] Researchers Bardach and Axelrod agree on the need for research on the dynamics and development of collaboration. Thus, Axelrod notes:

> Further exploration of the evolution of cooperation can profit from the greater specification of the pattern of interactions and the process by which those interactions themselves evolve. Research along such lines will not only help unite theoretical and empirical work even further than has so far been possible, but may also deepen our understanding of the initiation, maintenance, and further evolution of cooperation.[27]

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[24] Richard Burton and Borge Obel, *Strategic Organizational Diagnosis and Design* (Boston: Kluwer Publishers, 1998), 166.

[25] Burton and Obel, 165-189.

[26] Hocevar, et al.

[27] Robert Axelrod and Douglas Dion, "The Further Evolution of Cooperation," *Science*, New Series 242, No. 4884 (9 Dec 88): 1389. JSTOR; accessed 3 Nov 05.

Like theories of cooperation, collaboration research would certainly benefit from additional examination of the dynamic nature of collaborative processes over time.

Thus, many methods of studying collaboration and inter-organizational behavior exist. For example, one can reverse engineer a collaborative process to determine best practices. Eugene Bardach describes an analytical approach that "finds an amazing gizmo, takes it apart, and tries to figure out the clever trick that makes it work so well." Bardach highlighted not-so-magical interagency activities, including acquiring resources for collaboration, steering a course, and developing a culture of joint problem solving.[28] Like Bardach's research, this study is an attempt to analyze the evolution of the TEW in order to find out how it formed as a collaborative network. Thus, this research bridges the narrow divide between collaboration theory and networking and views organizations (the TEW in this case) as a source of collaborative processes. Details regarding network theory and methods for analyzing network development are explained further in Chapter III.

[28] Bardach, 40.

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III. NETWORK THEORY AND METHODOLOGY

Interagency collaboration can be viewed as a process involving a network of organizations. It follows that a descriptive analysis of the network's evolution will shed light on the collaborative process. This chapter reviews the applicability of network theory to explain problems of inter-organizational collaboration. This section also introduces social network analysis methodology and investigative tools that are applied to the TEW.

A. NETWORK THEORY APPLICATION TO COLLABORATION

Barabasi contends that, "the enigma of the society starts with the convoluted structure of the social network," and adds that "networks are the prerequisite for describing any complex system."[29] Jorg Raab echoes Barabasi's point on the overarching applicability of networks and views them as a means of coordinating social activity.[30] Given that, it follows that a network perspective on homeland security-related intergovernmental frameworks is appropriate, especially in situations where coordination is critical. Kapucu argues that specifically in emergency response, the way in which networks are connected affects the abilities of the network to respond.

> Networks that have few or weak connections, or where some actors are connected only by pathways or great length may display slow response to stimuli. Networks that have more and stronger connections with shorter paths among actors may be more robust and more able to respond quickly and effectively.[31]

Thus, a combination of inter-organizational collaboration theory and networking theory may provide new insights into modern day problems that are not only complex, but "wicked" due to the fact that their solutions require extensive inter-organizational coordination. In such cases, achieving an appropriate level of coordination itself becomes more difficult because no one organization is responsible for the entire problem.

[29] Albert-Laszlo Barabasi, *Linked* (London: Penguin Books, 2003), 238.

[30] O'Toole, 45.

[31] Kapucu, 34-35.

In the case of many social, economic and environmental issues, there is also no definite solution (as in a mathematical problem, for example).

Nohria lists several reasons why networks must be considered as part of organizational analysis. Like Barabasi, he notes, "all organizations are in important respects social networks and need to be addressed and analyzed as such." Furthermore, he argues that organizations cannot be taken out of their networked environment: "An organization's environment is properly seen as a network of other organizations." Within this 'inter-organizational field' or environment, Nohria says networks exist simultaneously as structures and actors themselves. They "constrain actions, and in turn are shaped by them."[32] They are dynamic, changing entities, necessitating analytical perspectives that incorporate their constant evolution.

In addition, Frederickson calls for network theory in situations where jurisdictional boundaries become fuzzy. He notes, "the focus of network theorists on nonhierarchical and non-market cooperation is especially relevant to public administration responses to the changing context of our work and particularly on the disarticulation of the state."[33] In complex public policy arenas where collaboration occurs, where efforts and budgets are linked, networks become even more relevant. O'Toole notes that federal spending now tends toward collaborative, multi-agency programs, rather than single-agency programs.[34] In practice, DHS approves requests for State Homeland Security Grant Program and Urban Areas Security Initiative grants to states and localities based in part on whether or not grant money supports interagency efforts. Bureaucratic red tape, however, significantly slows the process of requesting, approving, and distributing funds.[35] Organizations are thus faced not only with the cross-jurisdictional and complex problem of terrorism itself, but also with challenges in acquiring resources to solve their problems.

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[32] Nitin Nohria and Robert Eccles, eds., *Networks and Organizations: Structure, Form, and Action* (Boston: Harvard Press, 1992): 4-6.

[33] Frederickson, 705.

[34] O'Toole, 46.

[35] US GAO, "Homeland Security: Management of First Responder Grant Programs Has Improved But Challenges Remain," Report to the Chairman, Committee on Appropriations, House of Representatives (Washington: GPO, Feb 05), 4-5.

DHS' attempt to encourage interagency problem-solving via its grant approval process may hasten coordination to a certain degree. However, if the lure of federal grants is not enough to force change, then perhaps organizational results can. Kapucu concludes that hierarchical bureaucracies will become less important in the future and that "the organizations that get things done will no longer be hierarchical pyramids…they will be systems."[36] Of course, the networks making up those systems can be analyzed to determine how they function.

B. SOCIAL NETWORK ANALYSIS

Social network analysis (SNA) is not new. It often is traced back to anthropologists who sought a methodology appropriate for the study of societal relationships. Noted anthropologist Radcliff-Brown focused on a 'web' of social life, which eventually evolved to the term social 'network.'[37] Scholars seeking to explain interpersonal or inter-organizational behavior saw limitations in structural approaches that neglected social aspects. Even before the emphasis on 'social' entered into network analysis, Freeman explains how network analysts sought to uncover patterns and then "determine the conditions under which those patterns arise and to discover their consequences."[38] Over the years, network analysis has been applied to numerous fields, from biology to economics. Freeman applies SNA techniques to trace the evolution of SNA itself, and finds that no single path seems to exist for SNA; its theoretical progression seems more like a tangled social web.[39]

What is clear is that SNA offers several methodological advantages over a pure structural approach to organizational analysis. Barabasi offers a SNA metaphor. According to him, "networks have become the X-ray machines of our connectedness."[40]

[36] Kapucu, 35-36.

[37] John Scott, *Social Network Analysis: A Handbook*, 2nd Ed. (London: Sage Publications, 2000), 4.

[38] Linton Freeman, *The Development of Social Network Analysis* (Vancouver, BC: Empirical Press, 2004).

[39] Freeman.

[40] Barabasi, 237.

Instead of focusing on one organization or one layer in a bureaucracy or organization, SNA enables a multi-level perspective—a more comprehensive perspective. Marsden and Lin explain:

> The network orientation offers new approaches to describing and studying social structure and to dealing with complex problems of integrating levels of analysis: the manner in which individual actions create social structure; the manner in which social structure, once created, constrains individual and collective action; or the manner in which attitudes and behaviors of actors are determined by the social context in which action takes place.[41]

Thus, SNA is a versatile analytical tool. Although used as a macro perspective at times, SNA also can be used to disassemble networks and view them at a micro level.

Despite the fact that SNA has developed greatly from its early anthropological roots, some scholarly niches remain relatively untouched. Kanter notes that "most of the methods and concepts used by academics to study networks have a static, snapshot quality to them. Their focus is largely on structural characteristics of the network being studied, with little attention paid to how these networks were constructed by them members and how these members are using them."[42] Barabasi emphasizes the dynamicism of networks when he states: "Real networks are not static, as all graph theoretical models were until recently. Instead, growth plays a key role in shaping their topology."[43] Nohria extends this line of reasoning further and argues that "networks are as much process as they are structure."[44] Consequently, studies of networks must recognize the evolving—almost living--nature of networks.

In counterterrorism and emergency response, the "life" of the network depends on information flow to enable decision-making and action. Problematic or effective network relationships affecting this process can be revealed via SNA. Anthony Dekker explains that interpreting relations between people and/or groups in networks may uncover details abut information bottlenecks or critical tasks that have been unrecognized. Most

[41] Peter Marsden and Nan Lin, Eds., *Social Structure and Network Analysis* (Beverly Hills, CA: Sage Publications, 1982), 10.

[42] Rosabeth Kanter and Robert Eccles, "Conclusion: Making Network Research Relevant to Practice," in *Networks and Organizations: Structure, Form, and Action* (Boston: Harvard Press, 1992), 526-527.

[43] Barabasi, 221.

[44] Nohria, 7.

importantly, he notes, SNA enables "recommendations to improve communication and workflow in an organization, and (in military terms) to speed up what is commonly known as the observe-orient-decide-act loop or decision cycle."[45] Although counterterrorism and emergency response organizations each have unique informational requirements, they share the need for efficient information flow to support decision-making.

Both public sector and military organizations realize the benefits of using non-traditional, non-hierarchical structures at times in order to improve collaborative processes. Numerous attempts at public sector inter-organizational collaboration exist at the national, state and local level; countless more exist in the private sector, where businesses also realize the utility in flattening their organizations and improving coordination mechanisms between groups. It appears that an almost limitless number of potential network organizations could be studied using SNA.

C. RESEARCH METHODOLOGY

Several SNA techniques involve collection of quantitative data and application of mathematical modeling software to depict a social network. However, given the limited scope of this study, a less rigorous, qualitative approach to studying the TEW was chosen. The specific SNA method for this project draws upon techniques used by SNA scholars Nohria & Breiger. Findings from the network perspective are fused in the final chapter in order to reveal implications for theories and practices of inter-organizational collaboration.

Non-quantitative techniques remain effective tools for analyzing network structure. Scott emphasizes that qualitative network descriptors remain very useful. He states, "While it is, of course, possible to undertake quantitative and statistical counts of relations, network analysis consists of a body of qualitative measures of network structure."[46] Not surprisingly, the number of qualitative tools available for SNA is also

[45] Anthony Dekker, "Applying Social Network Analysis Concepts to Military C4ISR Architectures," *Connections* 24, No. 3 (2002): 94. Available at http://www.sfu.ca/~insna/Connections-Web/Volume24-3/Dekker.web.pdf. Internet; accessed 7 Oct 05.

[46] Scott, 3.

high. However, because this study is admittedly not a definitive work, a select number of qualitative measures were chosen in an attempt to emulate, at least partially, the methods of Nohria and Breiger and describe the evolution of a collaborative network.

Nohria used SNA to study the 128 Venture Group, a forum for people interested in high-technology ventures in the Route 128 region near Boston. Nohria focused on a single organization and tracked participants and network development over time while noting changes in the organization's environment. In that case, those interested in high-tech business ventures required access to timely information and needed a means to quickly coordinate efforts based on that information. Efficient coordination enables products to make it to market and earn profits sooner. Nohria found that the participants involved in the network at any given time changed frequently. In his case, participants focused on "searching" for information and complimentary resources they could use. He concluded that in many cases, "participants confront a dynamic problem in which a changing combination of technical, capital, management, and support-service resources are required at different stages of a venture's development."[47] This same situation is likely to be true in homeland security, where different sets of actors constantly "search" information and mechanisms to collaborate, depending on the information, threat or event. In describing the changing set of participants, he noted,

> …a disproportionately large number of the social ties created here are weak and therefore potentially bridging ties. This is because a majority of the participants who attend each meeting are strangers to one another….The 128 Venture Group thus acts as a 'weak-tie generator' where participants with different affiliations within the network may create bridging ties with one another.[48]

So, in studying participants in a growing network, it is useful to see if the network brings together already closely tied individuals or whether it creates new, weak links that facilitate otherwise impossible collaborative efforts.

[47] Nitin Nohria, "Information and Search in the Creation of New Business Ventures: The Case of the 128 Venture Group," in *Networks and Organizations: Structure, Form, and Action* (Boston: Harvard Press, 1992), 240.

[48] Nohria, "Information and Search in the Creation of New Business Ventures: The Case of the 128 Venture Group," 257.

In addition, Nohria observed the results of meetings which he argued created a "cosmopolitan" outlook where the weak ties not only enabled existing collaborative efforts, but also created a potential for future joint efforts.

> An individual who has several weak ties is exposed to a wide variety of viewpoints and activities and develops cognitive flexibility and a cosmopolitan outlook….It permits one to assess a much wider range of options and hence be more effective in searching for complimentary resources.[49]

This outlook seems similar to cultural aspects of collaborative capacity, where participants begin to see beyond their own needs and try to find 'win-win' solutions to the aggregate problem at hand.

Nohria's technique qualitatively tracks participation and growth of social networks while also considering environmental and cultural factors. As a compliment to this, Breiger suggests actors in networks have individual characteristics but are also affected by larger group dynamics. Those, in turn, affect the individual, making it virtually impossible to disconnect individual identity from the network. Breiger uses this "duality of persons and groups" as part of his SNA method.

> Consider a metaphor which has appeared in sociological literature but has remained largely unexploited in empirical work. Individuals come together (or, metaphorically, "intersect" one another) within groups, which are collectivities based on the shared interests, personal affinities, or ascribed status of members who participate regularly in collective activities. At the same time, the particular patterning of an individual's affiliations (or the 'intersection' of groups within the person) defines his points of reference and determines (at least partially) his individuality.[50]

Faust details Breiger's duality further, explaining that "Linkages in an affiliation network occur between two different kinds of social entities, referred to as 'actors' and 'events." The duality here approximates Nohria's notion that networks exist as both structures and actors; in action, they dynamically represent on-going interactive processes. Faust continues:

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[49] Nohria, "Information and Search in the Creation of New Business Ventures: The Case of the 128 Venture Group," 257.

[50] Ronald Breiger, "The Duality of Persons and Groups." *Social Forces* 53, No. 2 (Dec 74): 181.

> Viewed from the perspective of actors, participation in events links actors to one another. Viewed from the dual perspective of events, the actors' multiple memberships link events together. Putting these together gives a joint perspective of the simultaneous linking of actors through events and though actors.[51]

Therefore, this technique enables the study of network development over time, rather than focusing on a single event.

The concept of duality extends Granovetter's argument on the importance of weak ties. Where "an individual's ties are redundant with those of others," group centrality is said to be high, and strong ties exist[52] This concept can be used to support affiliation SNA via the use of two-mode data from actors, events and resulting relationships where it is argued that "two actors participating in the same event indicates the existence or potential for some form of social bond between them."[53] This technique focuses on the extent to which events create bridges between different parts of the network; it shows the evolution of the network as it incorporates more interests, perspectives and broader collaboration from additional, diverse groups.

In essence, the SNA method used here hybridizes Nohria and Breiger's methods. TEW actors and events are qualitatively detailed over time, from pre-TEW to the present, while also noting significant environmental changes that impact the network. The next chapter seeks to determine exactly *how* the TEW evolved from a small group of actors to a diverse, county-wide network bridging public-private, local-state-federal, and functional divides. Following that, this fused SNA perspective will be cross-fed into collaboration theory to enable further discussion of inter-organizational processes and final conclusions in Chapter V.

[51] Katherine Faust, "Using Correspondence Analysis for Joint Displays of Affiliation Networks," in Carrington, Scott & Wasserman, Eds., *Models and Methods in Social Network Analysis* (Cambridge: Cambridge University Press, 2005), 119.

[52] Martin Everett & Stephen Borgatti, "Extending Centrality," in Carrington, Scott & Wasserman, Eds., *Models and Methods in Social Network Analysis* (Cambridge: Cambridge University Press, 2005), 58.

[53] Everett, 63.

IV. LOS ANGELES TEW NETWORK EVOLUTION

Los Angeles's recent experiences in emergency response coordination include anti-terrorism support for the 1984 Summer Olympics and 2000 Democratic National Convention as well as responses to the 1992 riots, 1994 Northridge earthquake, 1998 anthrax scares, and post-9/11 incidents. Regarding these efforts, LA City Councilmember Jack Weiss noted LA's emergency response procedures are developed "more thoroughly than many other local governments."[54] Had these events not occurred, however, the geographic size, population and diversity of LA County still mean that cross-jurisdictional and cross-functional collaboration is necessary to plan for the emergency needs of the county's 88 cities and 10 million residents. In terms of counterterrorism, these influential historical events and local requirements shape the TEW's evolution as a collaborative network. In addition to the external events and environmental requirements, however, several self-initiated TEW actions also impact the network's development. This chapter examines evolution of the TEW and its collaboration, from its early foundations to its more formal organization and continuing outreach efforts.[55]

A. TEW OVERVIEW

One of the main architects behind the TEW, LA Sheriff Department Lieutenant John P. Sullivan, describes it as "a multilateral, multidisciplinary effort to monitor open source data to identify trends and potential threats, monitor specific threat information during periods of heightened concern, assess potential targets, and perform net assessments to guide decision-making during actual events."[56] The TEW facilitates

[54] Jack Weiss, "Preparing Los Angeles for Terrorism: A Ten Point Plan," Oct 02: 4. Available at http://knxup2.ad.nps.navy.mil/homesec/docs/nonprof/nps08-091504-49.pdf. NPS Homeland Security Digital Library; accessed 8 Nov 05.

[55] For a more detailed description of TEW structure and function, see Michael Grossman, *Perception or Fact: Measuring the Performance of the Terrorism Early Warning (TEW) Group* (Monterey: Naval Postgraduate School, 2005).

[56] John P. Sullivan, "The Local Need for Intelligence and Warning," RAND Conference Proceedings, Bioterrorism: Home Land Defense Conference, Pre-Attack Panel, 8 Feb 00: 1. Available at http://www.rand.org/nsrd/bioterr/agenda1.html#2. Internet; accessed 5 Nov 05.

emergency response in support of the Los Angeles County Emergency Operations Center (EOC). The Sheriff is the secretariat for the TEW, but does not officially take charge or usurp power from participating organizations, as shown in Figure 1.

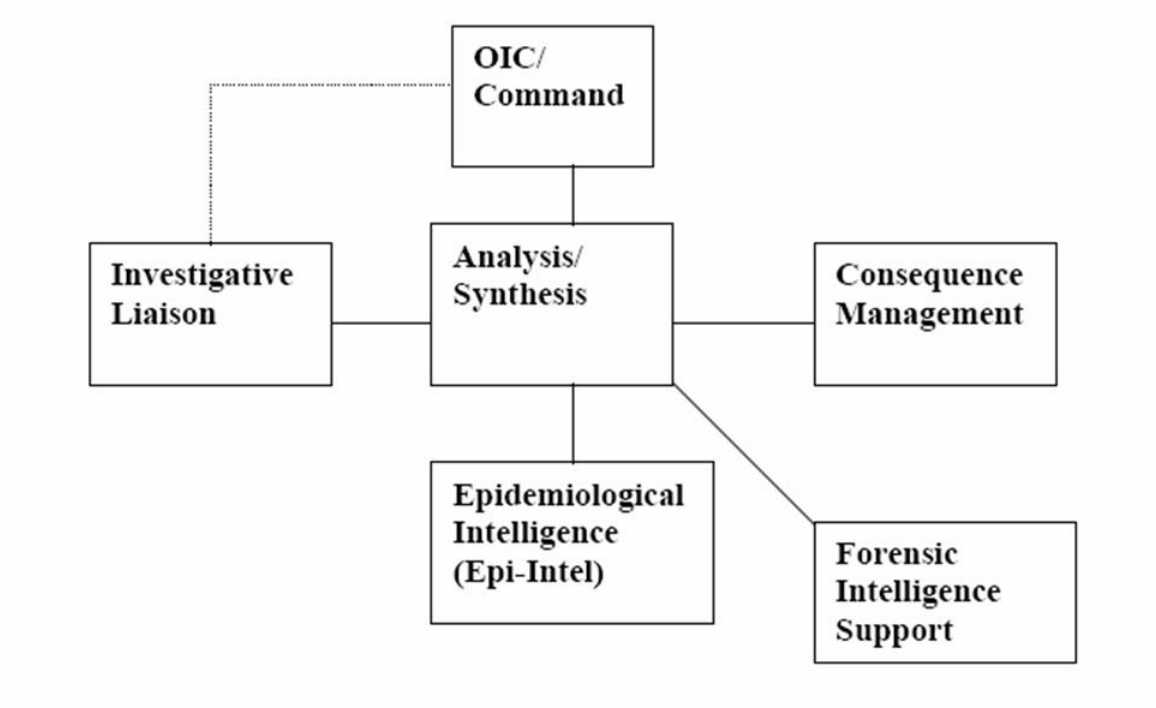

Figure 1. TEW Net Assessment Organization[57]

Prior to the existence of the TEW, California's Standardized Emergency Management System (SEMS) set up a framework for response to a variety of natural and man-made disasters. Although not specifically tailored to meet the terrorism threat, this framework links many of the actors involved in counterterrorism due to their shared responsibilities in generic emergency response, as per SEMS requirements. Under this system, mutual aid agreements mean that local jurisdictions can request assistance from other

[57] James P. Sullivan, "Networked All-Source Fusion for Intelligence and Law Enforcement Counter-terrorism Response," Conference Paper presented to "Integrating Intelligence and Law Enforcement for Homeland Security," Intelligence Studies Section of the 2004 ISA Annual Convention, Montreal, Quebec, Canada, 18 Mar 04, 7.

jurisdictions if response requirements exceed local capabilities. So, based on pre-existing, non-terrorism specific procedural arrangements, some of the same inter-organizational relationships capitalized upon by the TEW already existed within the SEMS (e.g., local police and fire departments agreements to augment each other in crisis situations).

In fact, California's emergency management system already had designated LA County as a unified Operational Area—a jurisdictional delineation that the TEW continued as well. In each county, the Sheriff acts as the default director of emergency operations "crosscutting public works, public health, public safety, and resource coordination."[58] The county EOC houses offices for representatives from several different county functional departments, including the Sheriff, Fire, Public Works, Internal Services, Health Services, Public Social Services, Coroner, and Human Resources Departments. The county's individual cities also are linked directly to the EOC. At times, military liaisons and other special representatives also are called. Overall, the departments represented at the EOC set up a generic emergency and disaster response capability, which is not necessarily integrated to maximize terrorism readiness. Mostly, the presence of these organizations in the EOC enables representatives to coordinate with their own organization's hierarchy.[59]

Thus, at first glance, it seems the TEW simply added previously missing counter- and anti-terrorism information needed to enable the state SEMS to respond to terrorist threats, potentials, and events. [60] However, terrorism-specific information was not the only missing link in an otherwise perfect SEMS. In determining *how* the TEW collaborative network evolved, the unique inter-organizational relationships that developed as part of the organization's maturation are used to demonstrate the added value of the TEW in linking otherwise disparate actors in a continuous process to ensure readiness for terrorist events.

[58] Sullivan, "The Local Need for Intelligence and Warning," 1-2.

[59] James P. Sullivan, interview with author, 30 Sep 05.

[60] Michael Grossman, "Comparative Government," Lecture presented at Naval Postgraduate School, 30 Jan 06.

LA's counterterrorism preparedness came to the fore prior to the 1984 Summer Olympics in Los Angeles and eventually led to the formation of the Los Angeles Task Force on Terrorism (LATFOT). According to its founding Memorandum of Agreement, the FBI functions as the lead agency in the LATFOT and unites the Los Angeles Police Department and Los Angeles County Sheriff's Department. The agreement kept the FBI in charge of terrorism investigative efforts while acknowledging the need for local interagency collaboration.[61] This arrangement represented an early version of the FBI's Joint Terrorism Task Force (JTTF) concept.[62]

Non-terrorist events drew attention to emergency response as well. Criticism of public response to the LA riots and Northridge earthquake encouraged reassessment of disaster preparedness and the interagency processes involved. In 1996, threats to attack the US and Americans in Osama Bin Ladin's fatwa also hastened TEW collaborative efforts. Then Deputy John P. Sullivan and Deputy Larry Richards took notice of Bin Ladin's escalatory rhetoric and concluded that "the only way to deal with a terrorist network was to create a counter-terrorism network and that information sharing among agencies would be the key to preventing and reacting to terrorist attacks. LA County's Terrorism Early Warning group was born."[63] The operational intelligence-oriented TEW and policy advisory-oriented Terrorism Working Group (TWG) both formed in 1996. The inter-agency TWG met monthly to develop terrorism-related plans, procedures and systems. As a compliment, the TEW's intelligence capabilities provide policy context for TWG decisions. Additionally, "They provide periodic intelligence estimates and white papers which are derived from open source information. They also develop warnings based on criminal intelligence and investigations."[64]

The "intelligence" effort fused law enforcement and open source threat information; at that time, the system did not include what is commonly thought of as

[61] Daryl Gates, "The Los Angeles Barrier Against Terrorism," *Police Chief* 26, No. 3 (Mar 89): 63.

[62] Grossman Lecture, 30 Jan 06.

[63] Lois Pilant, "Strategic Modeling," *Police* 28, No. 5 (May 04): 34-38. CSA database; accessed 5 Aug 05.

[64] Governor's Office of Emergency Services, "Local Planning and Guidance on Terrorism Response: A Supplement to the Emergency Planning Guidance for Local Government," Dec 98. Available at http://knxup2.ad.nps.navy.mil/homesec/ docs/legis/nps06-122103-01.pdf. Internet; accessed 5 Aug 05.

"traditional intelligence" from US intelligence agencies. By using its investigative liaison cell, the TEW used the LATFOT to link LA County and city fire departments, Department of Health Services and state office of Emergency Services into the LATFOT. Although the LATFOT remained focused on law enforcement, inclusion of the cross-functional TEW meant that terrorism was no longer viewed as purely a law enforcement issue requiring only the FBI and Police and Sheriff Departments.

The TEW held its first meeting in October 1996. Representatives from the Los Angeles Sheriff's Department, Los Angeles Police Department, the law enforcement branch of California's Office of Emergency Services, and several academic and research institutions attended the initial gathering. What is important to note in this initial gathering is that the TEW—from the beginning—sought external experts to assist in their process development. There seemed to be an open recognition among participants of the fact that the terrorist threat had now changed to the extent that many, many more organizations must be included in efforts to deal with this "wicked" problem. The TEW network quickly expanded with the addition of "fire service, public health, public works, and neighboring law enforcement agencies" representatives at the TEW's second meeting in November 1996.[65] During these initial meetings, inter-organizational divides remained obvious. Sergeant Sullivan noted that at one of the early meetings, "we started to discuss security measures and a law enforcement official said, 'Wait a minute. We can't discuss this in front of the Fire Department.'" Sullivan and Richards responded "Yes, we can. That's why we're here."[66]

At first, TEW monthly meetings aimed to enable the participating organizations to share threat information. However, the network soon became more than just an informal "sounding board." The members began producing formalized target folders with information on assessed threat potentials at specific locations thought to be potential targets and recommended responses. They also started compiling playbooks detailing how to respond to specific threats, including chemical and biological events.[67] These

[65] Pilant, 34038.

[66] Greg Krikorian, "Terrorism Early Warning Group Works to keep LA's Guard up," *LA Times*, 7 Nov 04, home edition, b1. ProQuest; accessed 5 Nov 05.

[67] Pilant, 34038.

playbooks are put to the test during training exercises run in conjunction with monthly TEW meetings. Early meetings also involved discussion of how to combine information from participating organizations as part of a collaborative analysis and assessment process—the beginnings of the current TEW assessment process.[68]

The TEW's pre-planning paid off in 1998 when a string of anthrax threats were issued in the Los Angeles area. During the summer, the TEW had released an Emergency Preparedness Bulletin, and in December 1998 the TEW published a policy advisory on response to weapons of mass destruction and anthrax. Just five days after the release of that document, four threats of anthrax were reported in greater metropolitan Los Angeles. Police, fire, emergency medical services, HAZMAT, FBI, the County of Los Angeles Department of Health Services, the California Department of Health Services, and Centers for Disease Control responded to the incidents with the Sheriff's Department providing oversight for the effort as per Emergency Management System guidelines.[69] The anthrax "attacks" were later determined to be hoaxes, but were quickly followed by exercises enabling the TEW to test existing processes and linkages while also revealing potential areas where the network needed to be expanded. TEW training taught first responders how to assess and respond to threats, how to verify hoaxes and when to halt evacuations.[70] This training was put to the test during the TEW's first field test in 1999. During the Westwind chemical-biological exercise, the TEW provided assessments to local, state, federal and military first responders.

At the same time, the TEW launched a major support effort in preparation for the Democratic National Convention, which was held in Los Angeles in August 2000. The TEW, along with a myriad of local, state, and federal agencies, including the US Secret Service, FBI, Sheriff, police, Highway Patrol and fire organizations all prepared for the possibility of demonstrations and threats. The TEW followed its now well-honed procedures for the event. TEW cells fused tactical information into strategic assessments

[68] Sullivan, interview with author, 3 Mar 06.

[69] Centers for Disease Control, "Bioterrorism Alleging Use of Anthrax and Interim Guidelines for Management--United States, 1998," *CDC Weekly Report*, 5 Feb 99. Available at http://www.cdc.gov/mmwr/preview/mmwrhtml/00056353.htm. Internet; accessed 11 Nov 05.

[70] Krikorian, b1.

and briefings which were provided to other involved organizations. In a study analyzing TEW performance during this event, Commander Grossman from the LA Sheriff's Department concluded:

> During this short period the TEW demonstrated its capability to integrate field intelligence from multiple sources to form an overall countywide picture. It provided an intelligence fusion system that integrated criminal and operational intelligence with emergency management practices across jurisdictional lines.[71]

The event enabled the TEW to further strengthen its intelligence analysis and information sharing procedures and relationships from local to state and federal levels.

Following the events of September 11, 2001, the TEW remained at the forefront of LA County's terrorism readiness efforts. Chemical-biological response requirements and inter-organizational relationships continued to develop as LA officials witnessed nationwide 9/11 response efforts and anthrax investigations. Since 9/11, Operation Talavera, Determined Promise 2004 and Operation Chimera response exercises tested local, state and federal bioterrorism incident response capabilities in LA. The relationships forged during these practices became formalized in a recently signed Memorandum of Understanding between the key agencies involved in chemical-biological response—LA County Public Health, FBI and the LA Sheriff's Department.[72]

Looking overall at the TEW's performance in this brief historical review, it is clear that the organization integrated numerous organizations into a rather successful network. In order to appreciate *how* the network evolved, however, a closer look at its use of flexible and scalable relationships is needed.

B. SNA OF PAST AND PRESENT TEW

The drive to integrate organizationally in response to increasingly networked adversaries shaped TEW design as a collaborative network. From the beginning, built-in organizational flexibility was a priority. Sullivan describes the TEW as having a kind of selective outreach capability, where network response is tailored to situational needs:

[71] Grossman, *Perception or Fact: Measuring the Performance of the Terrorism Early Warning (TEW) Group*, 45.

[72] "LA Joint Bioterrorism Task Force Issues MOU," *US Federal News*, 12 Dec 2005. Lexis-Nexis; accessed 20 Dec 05.

> We can plug in modules of what we need. If we need a biological response, we incorporate the public health community. If we need a chemical response, we incorporate the hazmat community. If we have a conventional bomb response, we bring in the appropriate people; if it's a cyber response, we reach out to cyber specialists.[73]

Instead of activating the entire network, as might occur in hierarchical organizations, the TEW efficiently pulses only requisite portions of the network.

Since its inception, TEW network nodes have dramatically increased in number. Initially, network nodes represented organizations participating in TEW meetings, and some communication and coordination may have remained within organizational, geographical or functional nodes, despite the existence of the "network." With the TEW's cross-functional elements, which place representatives from multiple organizations in the same section, new and stronger cross-functional and inter-organizational ties have formed.

According to Sullivan and Bunker, Arquilla and Ronfeldt's strategy of counternetwar influenced the TEW network model.[74] As per that strategy, each part of the TEW network has the capability to prevent *and* respond and can remain engaged—and useful--during all phases of operations. In essence,

> …each TEW node can perform dynamic assessment, cutting across 'stovepipes' to configure an adaptive assessment organization that incorporates the internal (intra-node) and external (across nodes) elements necessary to identify specific threats, trends and potentials. Configuring each node—and ultimately the entire network—to have permeable boundaries that expand capability when needed and exploit distributed subject matter expertise (exploiting the skills and capabilities of other nodes and clusters) to solve a specific problem, allows the network to become agile and adaptive.[75]

The scalability of this network approach means that network relations continually change as different groups of organizations become linked via TEW operations. The question

[73] Sullivan, "The Local Need for Intelligence and Warning," 3.

[74] John Arquilla and David Ronfeldt, *Networks and Netwars: The Future of Terror, Crime, and Militancy* (Santa Monica, CA: Rand, 2002), 14-15.

[75] John P. Sullivan and Robert J. Bunker, "Multilateral Counter-Insurgency Networks," *Low Intensity Conflict and Law Enforcement* 11, No. 2/3 (Winter 2002): 365.

remains, how did network links evolve? In this section, network changes will be used to draw conclusions about overall TEW network patterns.

1. Building on the SEMS Structure

The early TEW network capitalized upon the existing Emergency Management System and the LA County Emergency Operations Center. In other words, the TEW network focused on a specific problem (terrorism) using some pre-existing links. Long-standing local processes place the Sheriff in the center of a network linking several county departments (Fire, Public Works, Internal Services, Health Services, Public Social Services, Coroner, and Human Resources). The EOC facilitates coordination between organizations, but for the most part each organizational or functional "stovepipe" works its own issues in a hierarchical, bureaucratic fashion. The EOC brings together some of the right pieces for coordination, but does not put them together in a manner which maximizes analytical and assessment capabilities for terrorism. Individual organizations remain functionally and geographically parsed, rather than integrated for collaborative assessment and action.

Although the LATFOT offered the potential for some inter-organizational collaboration, LATFOT processes remained somewhat stove-piped. LATFOT did not incorporate non-law enforcement entities into the network responsible for assessing terrorism threats. This is in line with most pre-9/11 counterterrorism thinking: terrorism was viewed as a law enforcement issue, rather than a national security issue directly involving a broader range of organizations.

Comparing the organizations represented at the TEW's first two meetings, it seems the TEW pulled representatives from already participating SEMS organizations. The way in which the TEW put those organizations together, however, marked a significant departure from that structure. In particular, representatives from multiple departments worked together in each TEW cell; they were no longer segregated by organization. Although each TEW cell had a specific function, representatives from multiple departments and functionalities were represented in each. Thus, TEW assessments and recommendations were truly the product of a collaborative process,

where multiple organizations have inputs at each stage of investigation and analysis. For example, public health questions were farmed out for resolution by public health representatives assigned to the TEW, leaving less room for error in translation. Having received answers from the public health field, a TEW public health representative then framed the received information more specifically for the TEW and its counterterrorism-specific needs.

Also of significance is the fact that the TEW facilitated input from outside scholars and experts during its early meetings. Sullivan and Richards knew where they wanted to go, but openly acknowledged a need for additional, expert guidance to make their vision reality.

> We've incorporated, right from the first meeting, outside subject matter experts to keep us from getting tunnel vision. We brought in Dr. Robert Bunker from Cal State, San Bernardino. And we brought in Maury Eisenstein from RAND Corporation. We actively solicited participation from Los Alamos National Lab, Lawrence Livermore and Sandia National Labs, and Battelle Memorial Institute, to make sure we didn't miss something, to make sure we didn't just look at the terrorist threat from our traditional paradigm.[76]

TEW membership and processes were vague at the start, but there was agreement on the need to work together on terrorism issues. Over time, it became clear that the TEW was not going to be doing business as usual.

2. Developing New Processes

Opinions from outside experts combined with the ideas of those involved to create an entirely new type of intelligence fusion and collaborative terrorism assessment process—intelligence preparation for operations (IPO), which aims to achieve not just situational awareness, but all-source situational *understanding*.

> Intelligence preparation for operations is emerging as a civil analog to the military intelligence preparation of the battlefield to serve response information needs. IPO provides a standard tool set for situational recognition, course-of-action development, and response rehearsal. This

[76] Sullivan, "The Local Need for Intelligence and Warning," 4.

> process bridges the gap between deliberate planning and crisis action planning for all facets of a unified multi-organizational response organization.[77]

This process, developed via consultation with civil, military and private sector experts brought LA County's terrorism support processes to the cutting edge of warfare theory. The underlying principles of this process had been discussed for years, even before the initial TEW meetings; however, TEW meetings enabled feedback on the process.

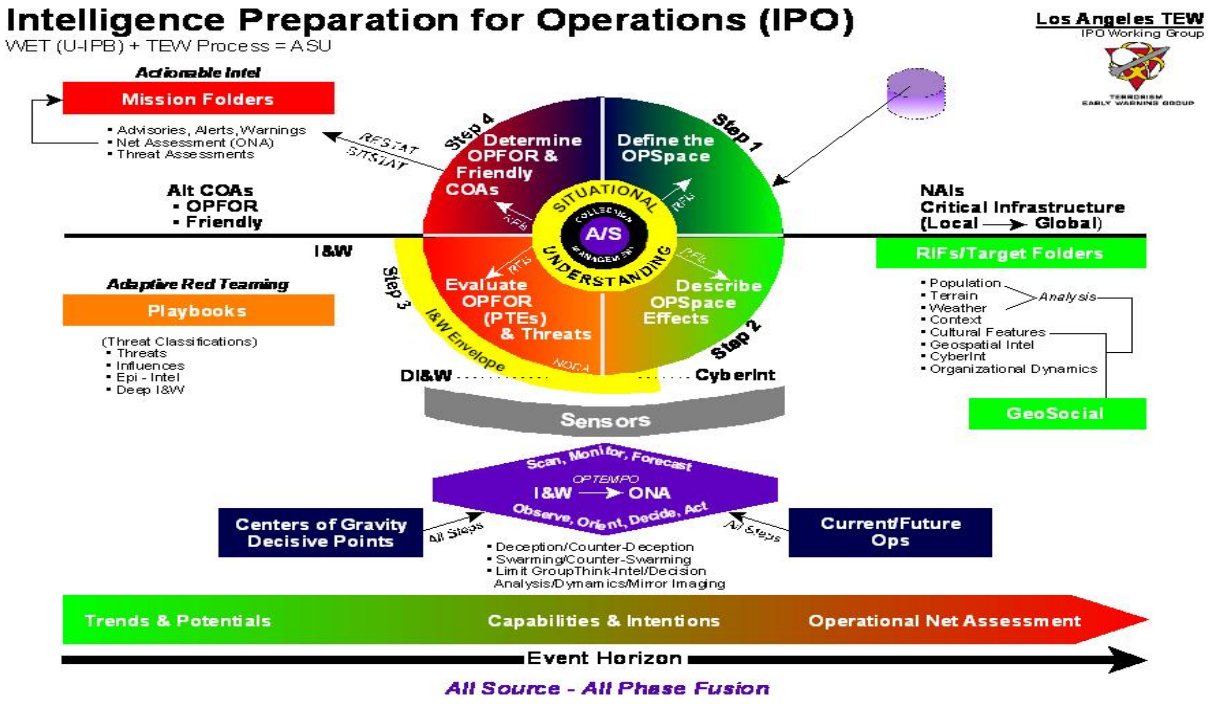

Figure 2. Intelligence Preparation for Operations (IPO)[78]

The TEW process adapts and fuses parts of several existing military and civilian cycles, including the intelligence cycle, targeting cycle, targeting & collection management cycles, tasking cycle, OODA loop, and intelligence preparation of the battlespace (IPB). The analysis and synthesis (depicted as A/S above) function integrates the IPO cycle. The cylinder shown on the diagram is meant to show that the cycle occurs

[77] John P. Sullivan, "Understanding Consequences in Urban Operations: Intelligence Preparation for Operations," *Intsum Magazine* XV, No. 5 (Summer 2005): 14.

[78] Sullivan, 30 Sep 05.

at multiple levels, integrating numerous functions at the same time over the entire course of an event (event horizon). The process is not intended to be simply a circular cycle. Of note, there are five cells plus an OIC in the TEW. These five cells are not specifically tied to the four steps in IPO the process, but do support it. The IPO steps are: Define the Operations Space (OPSpace), Describe OPSpace Effects, Evaluate Opposing Force (OPFOR) & Threats, and Determine OPFOR & Friendly Courses of Action (COAs). These four activities remain in a state of virtually constant execution; there is no 'down time' while the other steps are executed. The process integrates concepts of fourth-generation warfare where targets and infrastructure are evaluated on several levels--from geo-social to more traditional terrain and population standpoints. There is also an intentional focus on swarming/counter-swarming strategy and deception. The IPO process' fusion of strategic and theoretical schools of thought makes it truly unique.[79]

Similar to the way in which the TEW organizational concept builds upon net-centric warfare principles in terms of its interagency relations, the IPO process applies fourth generation warfare concepts to intelligence analysis. IPO expands upon traditional consequence management, conventional IPB and urban IPB. Instead of a cyclical process of analysis, where analysis is seen as a sequential process, IPO applies networking principles to the analysis process to create a closely linked process whereby analytical assessments are the result of a web of collaboration which blurs the line between operations and intelligence.[80] Instead of linear interactions, where intelligence requirements and assessments are passed back and forth between operations and intelligence units, IPO recognizes the non-linear nature of intelligence and existence of "complex interactions" where

> there are branching paths, feedback loops, jumps from one linear sequence to another….connections are not only adjacent, serial ones, but can multiply as other parts or units or subsystems are reached.[81]

Within this framework, IPO supports a subsystem (TEW) of a larger system (EOC)—a marked departure from hierarchical organization and linear process approaches.

[79] Sullivan, 30 Sep 05.

[80] Sullivan, 30 Sep 05.

[81] Charles Perrow, *Normal Accidents: Living with High-Risk Technologies* (Princeton, NJ: Princeton Press, 1999), 75.

Along with the theory behind the IPO process, the TEW is in the process of developing training and documentation to support their vision. The TEW already has participated in numerous exercises and continues documenting and revising its tactics, techniques and procedures (TTPs) based on those experiences. The TEW's formalized "network protocols" capture many of the details on how collaboration actually occurs within the network. These "protocols" were named as such to avoid confusion with non-network rules or formal tasking requirements, maintain cooperative attitudes and reduce organizational resistance.[82] Documentation of the processes, as currently understood, however, is a critical step in institutionalizing the network's mission and goals. Without official documentation of the creative analytical processes, the innovative work of the TEW's pioneering leaders could easily be lost after just a few personnel changes.[83]

Overall, the TEW's IPO process takes combined OODA / IPB loop concept and turns it into a networked process where assessments are instantaneous yet at the same time constantly being updated. The process takes into account possible sources of information and assesses it from diverse perspectives to generate usable, fused assessments which are the product of a truly collaborative process. As a compliment to theoretical process improvements, technical advances have facilitated communications improvements within the TEW and EOC. These communications technologies have, in some cases, enabled more efficient dissemination of information in support of the IPO process.[84]

3. Extending the Network

The TEW did not stop at process improvements; its members realized that in order to make their IPO vision truly net-centric, they had to extend their network further. They knew they had to coordinate from the start and dove head-first into their collaborative process with just a few of the pieces in place. In essence, TEW set out on a "collaborate first, ask questions later" approach where participating organizations decided

[82] Sullivan, 3 Mar 06.

[83] Grossman, interview with author, 30 Jan 06.

[84] For details on communications issues, see Todd Gleghorn, *Exposing the Seams: The Impetus for Reforming US Counterintelligence* (Monterey, CA: Naval Postgraduate School, 2003).

to work together on analysis, even before funding and manning issues were resolved. At the beginning, TEW work began as an additional, unofficial task for most of the participants. Until recently, when organizations sent representatives to work TEW issues, those personnel were not replaced. This meant that for some organizations, committing personnel to counterterrorism has been at the expense of other tasks.[85]

Despite personnel challenges, the LA County network of first responder organizations expanded further. Orange County Sheriff Carona and LA County Sheriff Baca took note of an established South Bay area of Los Angeles County liaison program, which linked Sheriffs and police for information sharing and mutual aid support. By the end of 2002, they had officially expanded this program, adding fire and health agencies and extending it throughout the county as the Terrorism Liaison Officer (TLO) program.[86] This effort strengthened official links and information flow between county and city organizations. Although local first responder organizations had functional, hierarchical ties to the county via their traditional hierarchical chain or command, the TLO program enabled direct non-stove piped communication from local organizations to the TEW and EOC.[87]

At the same time, TEW expansion continued on a separate front as more representatives from more organizations and more *types* of organizations were invited into the fold. TEW participants realized that although some of LA County's infrastructure was publicly owned, many of the critical infrastructure sites important to emergency response were privately owned. So, infrastructure liaison officers (ILOs) were invited to work with the TEW in order to ensure readiness for their companies' university, utility, commerce or industry site. The reciprocal, albeit voluntary, relationships in the ILO program allowed information and training to be disseminated to organizations represented by the ILOs; additionally, concerns and vulnerabilities reported

[85] Jack Riley, *State and Local Intelligence in the War on Terrorism* (Santa Monica, CA: Rand, 2005), 37.

[86] Sullivan, 3 Mar 06.

[87] U.S. House of Representatives, Select Committee on Homeland Security, Testimony of LA County Sheriff's Department Captain Michael Grossman, "First Responders: How States, Localities and the Federal Government Are Working Together to Make America Safer," 17 Jul 03. Available at http://www.globalsecurity.org/security/library/congress/2003_h/030717-grossman.doc. Internet; accessed 5 Nov 05.

by ILOs provided further impetus for TEW readiness planning and assessments. Finally, many of the companies have assets which may be useful in the event of a terrorist attack, so they are an important source for potential emergency resources. Private interest in the program was high and spread via word of mouth and unofficial channels; organizations joined as they noticed other companies doing so; it seemed no one wanted to be seen as passing up an opportunity to improve their organization's terrorism readiness.[88]

4. External Links to LA's TEW

The LA TEW maintains links with other TEWs as well as organizations at the state, federal and international levels. These external links compliment the communication and information flow available via the EOC. This "over-the-horizon" perspective keeps LA's TEW strategically, tactically and theoretically aware of terrorism-specific issues as well as inter-organizational innovations which may become relevant in LA.

In addition to the TEW and TWG, LA County joined with neighboring Orange County to develop a Homeland Security Advisory Council (HSAC) that worked, like the TEW's TLO and ILO programs, to link public and private sector terrorism efforts. This policy initiative also provided another avenue for input by outside experts during the HSAC's bimonthly meetings. Orange County Assistant Sheriff Jaramillo describes the HSAC's goal "to provide direct interaction among senior executives from industry and the community with law enforcement and public safety services in support of Homeland Security, civil protection, and critical infrastructure protection," thus creating a "bridge for the business community to have a direct contact with subject matter experts for counsel and advice in support of planning, training, and activation."[89] The extension of LA TEW existing links out into the private sector via the HSAC increases the TEW's potential effectiveness by increasing its pool of available information and resources. Although the HSAC functions in more of an advisory capacity and does not process

[88] Sullivan, 30 Sep 05.

[89] United States House of Representatives, Select Committee on Homeland Security, Testimony of George Jaramillo, Assistant Sheriff of Orange County, California, 17 Jul 03. Available at http://www.globalsecurity.org/security/library/congress/2003_h/030717-jaramillo.doc. Internet; accessed 5 Nov 05·

intelligence information, its links to the TEW make it useful as part of the TEW's scalable network. It also provides another outlet for TEW products to impact local decision-making and readiness.

Within the region, the TEW also works with other TEWs. TEW-to-TEW links between the Orange and LA County TEWs may not be as "strong" as those within the LA TEW itself; however, because the TEWs share many of the same processes and theoretical outlooks, the TEW expansion to a certain degree expands the strong network core and, perhaps, its corresponding ability to support an increased number of weak external links. Stronger connections at the TEW-TEW level, in addition to the already strong local connections increase the TEW's ability to respond effectively.[90] Jaramillo describes the close relationship between the two nearly identical organizations and how it has spurred additional TEW-to-TEW links.

> These units converse on a daily basis sharing information and intelligence. Members of these teams regularly attend training seminars, exercises, and conventions together. As a result of the efforts of the effectiveness of the Terrorism Early Warning Group, agencies from California, Washington, Nevada, New York, Oklahoma, and Nebraska have formed TEWG's. The information sharing and dissemination at a local level continues to grow. Monthly conference calls have been established with several southland agencies where information is shared regarding terrorism issues.[91]

Although not all TEW's are identical—and may not need to be, based on local requirements, they generally seek to apply integrative (non-stove piped) inter-organizational collaboration techniques and processes in support of counterterrorism and homeland security programs. Their varying levels of development, along with the fact that the LA TEW itself is not done evolving, mean that TEW evolution overall will likely to continue for some time.

At the state level, the TEW works closely with several organizations. The Governor's Office of Emergency Services administers the SEMS and EOC architecture that the TEW supports. The TEW works closely with the State Department of Justice and, since the establishment of the California Governor's Office of Homeland Security in

[90] Kapucu, 34-35.

[91] United States House of Representatives, Select Committee on Homeland Security, Testimony of George Jaramillo.

2003, it has been working with additional, newly formed state organizations, including the California Regional Terrorism Threat Assessment Center (RTTAC). In addition to the State RTTAC, four regional RTTACs were created to align with existing FBI regions and JTTFs. The RTTAC structure provides a terrorism-specific focus to the links established within the emergency management system.[92] It mirrors many of the EOC links at the state level, focusing on information sharing:

> The STTAC coordinates the ongoing information sharing and prevention efforts of State agencies, including the Office of Homeland Security, California Department of Justice, California Highway Patrol, Office of Emergency Services, Emergency Medical Services Authority, California Department of Food and Agriculture, and other State agencies.[93]

The RTTAC structure also supports a state-wide TLO program, which builds upon the TLO network started by the LA TEW.

Beyond the state level, the TEW maintains ties to the Department of Homeland Security and FBI (via TEW investigative liaison cell coordination with the JTTF). Based on the existence of critical infrastructure targets in LA County and experiences from the Olympic Games and DNC, the TEW also maintains links to the Coast Guard, Secret Service and Bureau of Alcohol, Tobacco and Firearms. The LA TEW extended its network further by working directly with diplomatic, counterterrorism, and law enforcement organizations. It has coordinated with local representatives from France, Canada, and Sweden, and has sent representatives to visit Israel, Pakistan, Jordan, and the UK. This direct local-to-international coordination exemplifies the non-hierarchical, network nature of TEW collaboration and coordination. The TEW pulls as needed from its network of resources, no matter the level or nationality of the organization.[94]

At varying levels, TEW links bind public-private, military-civil, law enforcement-intelligence, and terrorism-emergency response networks. In 2005, LA County Sheriff Baca enabled an additional avenue for community outreach when he created the Muslim

[92] US Senate, Commission on the Judiciary, Subcommittee on Terrorism, Technology and Homeland Security, Statement of Director Matthew Bettenhausen, California Office of Homeland Security, 26 Oct 05. Available at http://judiciary.senate.gov/testimony.cfm?id=1647&wit_id=4724. Internet; accessed 5 Jan 06.

[93] US Senate, Commission on the Judiciary, Subcommittee on Terrorism, Technology and Homeland Security, Statement of Director Matthew Bettenhausen, 26 Oct 05.

[94] Grossman Lecture, 30 Jan 06.

American Homeland Security Congress. The program aims to educate both Muslim and non-Muslim communities in an effort to discourage extremism within the Muslim community and hatred or discriminatory attitudes by the non-Muslim community against Muslims. The creation of this organization offers a resource for information on the Muslim community. The Muslim American Homeland Security Congress does not function in an intelligence capacity, but provides an avenue for clarification of Muslim issues.[95]

5. Joint Regional Intelligence Center Participation

TEW members occupy several cramped office spaces within the LA County EOC. The spartan office arrangement nevertheless sustains a cadre of dedicated TEW analysts. The mere fact that under this arrangement, TEW representatives from various organizations work in the same building on shared terrorism issues, however, represents a major step forward. During EOC activation, this arrangement also allows TEW members to maintain ties to their respective parent organizations, who might have additional representatives assigned to the EOC working non-TEW tasks.[96]

Later in 2006, the TEW is projected to gain some additional office space in a planned Joint Regional Intelligence Center (JRIC) in Norwalk, CA. The Center is a joint effort between the California State Department of Justice, US Attorney's Office, LA County Sheriff's Department, FBI, and LA Police Department and will allow representatives from federal, state and local agencies to be collocated in a shared joint fusion center facility. The Center will serve as a clearinghouse for terrorist-related leads and intelligence. The JRIC's perspective goes beyond LA County and covers Orange, Riverside, San Bernardino, Ventura, Santa Barbara, and San Luis Obispo. With representatives from those counties as well as state and federal agencies present, the JRIC will enable joint analysis and investigation of terrorist-related threats and activities.

In addition to access to some modern office space in the JRIC, the TEW will receive improved communications technology support enabling better information

[95] Grossman, 30 Jan 06.

[96] Sullivan, 30 Sep 05.

sharing with other regional TEWs and Regional Terrorism Threat Assessment Centers (RTTACs) in San Diego, San Francisco, Sacramento, as well as the California state RTTAC.[97] By partnering a diverse pool of local, state and federal agencies in a 24/7 operation, the JRIC offers the potential to significantly improve the quality of counterterrorism information. If the stated objectives for the center become reality, combined information and analysis from various organizations may produce predictive assessments regarding terrorism threats that were otherwise impossible by individual agencies. TEW representatives will still man their EOC facility, however, since their main responsibilities are to the EOC and EMS, especially during crisis situations. If additional manning enables 24/7 TEW manning at both facilities, the potential for collaborative analysis could increase, as well.[98]

In many ways, the JRIC initiative demonstrates just how far interagency collaboration has come since the LATFOT launched 20 years ago. LATFOT representatives recognized the importance of fused information to counter terrorist threats that transcend local, jurisdictional boundaries. In fact, the Memorandum of Agreement that formed the LATFOT acknowledged the value of combining the street knowledge of local agencies with the informational and investigative resources of other state and federal organizations.[99] That same perspective is now theoretically operationalized via the projected assignment of personnel from multiple organizations to work in a joint terrorism center. However, JRIC analytical processes must take advantage of the combined inputs its interagency participants submit in order to have a real impact. If not, the JRIC may simply provide a new facility for business as usual--law-enforcement focused analysis--instead of capitalizing on the TEW all-source, fused intelligence and analysis processes.

[97] *County of Los Angeles Strategic Plan*, 2005 Update Available at: http://lacounty.info/sp_com.pdf. Internet; accessed 5 Nov 05.

[98] Sullivan, 3 Mar 06.

[99] Gates, 63.

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V. FINDINGS

This chapter links the case specific experiences of the TEW back to the theories presented in Chapters I and II in order to explain how the TEW network evolved. When comparing the TEW experience to the literature on collaboration and networks, the case appears to be a textbook example of many of the theoretical concepts. The TEW case demonstrates the true difficulty of creating and sustaining successful interagency collaboration efforts. In terms of its evolution, the TEW smartly paced its growth as a network. Despite its strategic outlook, expansive, all-source reach that extends the TEW network far beyond the borders of LA County, the network remains focused on its LA-specific mission requirements.

A. DRIVEN BY CIRCUMSTANCE TO COLLABORATE

Within LA County, the sheer number of functional and geographic agencies at varying levels of government created the need for a robust structure to coordinate emergency response for the growing number of LA County residents. In the case of terrorism, where the problem and solution require coordinated action by interdependent agencies, organizations may theoretically choose varying levels of cooperation. Realistically, several factors facilitated the TEW drive toward collaboration.

Even in non-terrorism emergency response and planning, LA County first responder organizations met many of the conditions mentioned by in organizational theory literature as supporting coordination, cooperation, or collaboration. Axelrod's condition that organizations perceive continued long-term contact is certainly met; LA first responders know from recent first-hand experiences (LA riots, Northridge earthquake, etc.) that coordinated response is necessary. No agency wants to appear unwilling to cooperate or coordinate in emergency situations. However, perhaps because of criticism in these recent cases, LA's organizations not only want to work together; they realize they must work together from planning to execution in order to achieve win-win solutions.

Bardach's delineation of collaborative acts as either preparatory or non-preparatory provides additional clarification in the LA case. During crisis, LA County's organizations are expected to spring into seemingly coordinated, collaborative action. According to Bardach, this type of action is possible because of painstaking preparatory collaboration; the fact that preparations are made for such collaboration is required for "readiness," making planning an intrinsically valuable part of emergency response:

> In emergency services, for instance, the understandings whereby neighboring fire departments would render mutual aid are of value every day that they are not invoked, whereas the acts of mutual aid are of value only on the day in ten or twenty years when conditions require them.…To generalize from these examples, it is the potential to engage in collaborative activities rather than the activities themselves that is what we really care about when we talk of interagency collaboration.[100]

Even if emergency response processes are not called into action, the fact that they are available and ready is important. So in the case of emergency response, collaborative capacity may be just as important as collaborative action. Either way, collaboration—working toward shared objectives—is expected.

This study did not look extensively at organizational structure, except to say that in general, among the numerous organizations involved in LA County's terrorism planning and response, some type of cross-functional and interorganizational framework is appropriate. Burton and Obel's descriptors for the environment—equivocality, complexity, uncertainty, and hostility, reveal more specific organizational structure implications. Equivocality focuses on agenda setting and confusion; it is similar to what Bardach explains as a preparatory collaborative step--"Reaching and maintaining consensus on basic goals and the tradeoffs among relevant sub-goals."[101] The LA TEW agenda was comparatively undetermined as it formed, but clarified later as group activities and TEW processes became routine and documented. Complexity most likely changed very little, if at all; interdependence between organizations involved with LA's counterterrorism planning and response remains "wicked." Although the TEW has added private and non-profit organizations to the mix; overall complexity remains high. High

[100] Bardach, 20.

[101] Ibid, 18.

uncertainty reflects confusion regarding the variables that must be monitored. In terrorism planning and response, each functional organization brings to the table a capability to monitor its own set of specialized variables. Collaborative IPO analysis, however, adds even more measures and trends to be monitored. IPO broadens the outlook for indicators of terrorist activity while also emphasizing the importance of mutli- or all-source intelligence. As this process has matured, it lessens uncertainty over the *type* of data that should be collected as well as the way in which that data supports operations. Among the first responder organizations, inter-organizational political differences existed, but not to the extent where the organizational existence of any one organization was at stake. Unlike the business world, the TEW did not have to show profit. With the help of its parent organization, the Sheriff's Department, the TEW faced little outright hostility. However, individual organizations supported and participated in TEW activities according to their own view of the problem. Most seemed to agree that 'win-win' solutions were optimal; the difficult part was smoothing out the details to enable collaboration. As the TEW concept is emulated in other localities, hostility to the TEW itself is reduced; the TEW organizational concept is now widely accepted.

Given this environmental mix, Burton and Obel suggest propositions regarding resultant formalization, organizational complexity and centralization. Uncertainty and complexity remain unchanged for the TEW, while equivocality has decreased slightly as the organization has reached some agreement on its agenda and mission. Burton and Obel suggest that formalization, organizational complexity and centralization should all be low in such cases. As equivocality decreases, a medium level of formalization may be possible. They note:

> Medium formalization suggests a relatively small number of written rules. The rules apply to procedures to deal with the uncertainty. In this case social formalization using professionals may be appropriate.[102]

For Burton and Obel, low centralization also lessens the likelihood of information overload, as is possible in more traditional hierarchical organizations. Organizational complexity refers to the degree of horizontal, vertical, and spatial differentiation in an

[102] Burton and Obel, 185.

organization.[103] The TEW combines horizontally differentiated functional organizations, links vertically differentiated entities and attempts to bring representatives together frequently in a shared forum—clearly attempting to simplify and desegregate the organizational landscape. Therefore, it appears the TEW network approach with low centralization and low organizational complexity achieves environmental fit. It has formalized slightly over time, to ensure continuity of its innovative processes. Documentation ensures that new TEW personnel understand the processes in place, so that when they want to suggest improvements, they can do so from an educated point of view. As mentioned earlier, however, TEW "protocols" provide more of a reference rather than a set of rules written in stone.[104]

Thus, the problem of terrorism and the number of organizations involved just within LA County alone necessitated a creative framework to integrate efforts of multiple organizations. The choice of networked counterterrorism organization not only matched the environment, but also addressed the need for efficient information flow, unencumbered by a bulky chain of command.

B. CONSENSUS-BUILDING VIA TEW LEADERSHIP AND ANALYTICAL PROCESS

Although environmental factors favored collaborative, networked structures, it is the way in which participants interpreted and acted upon those factors that determined the pace and method of network-building. Overall, TEW structure and processes formed slowly, limiting hostility while maximizing organizational support for the TEW's collaborative approach. A review of the actors and actions of the network's participants over time reveals an overall "meta-leadership" style for the network.[105] Although the network was certainly "managed" to a certain degree by the Sheriff's Department, who started the initiative, their actions aimed to facilitate more than to direct. The TEW's

[103] Burton and Obel, 68

[104] Sullivan, 3 Mar 06.

[105] Leonard Marcus, Barry Dorn, and Joseph Henderson, *Meta-Leadership and National Emergency Preparedness*, Center for Public Leadership Working Paper (Boston: JFK School of Government at Harvard, Spring 2005): 46-48.

non-aggressive collaboration facilitated the initial expansion of its network and contributes to the resilience of the organization today.

At a general level, people and organizations consciously choose whether or not and to what extent to collaborate and work together; environmental factors cannot force collaborative "reflexes." Bardach mentions that organizations seeking collaboration need to develop an "interpersonal culture of trust and pragmatism" as well as a "system for building and maintaining consensus at the executive, or policy level." Achieving this problem-solving ethos then operationalizing it via consensus-building processes, however, takes time. Bardach concludes, "It takes time, effort, skill, a mix of constructive personalities who are around long enough to build effective relationships."[106] In this case, an ingenious group of TEW pioneers was already familiar with existing county structures and knew personnel in key agencies across multiple levels of government. They pitched their idea as an innovation to help the county, instead of offering criticism to prod organizations into participating. Invitations to participate in the TEW were couched to keep inter-organizational hostility in check.

From the start, the TEW was a home-grown, bottom-up approach intended to fill in the seams between existing structures which could cause failure in terrorism planning and response.[107] It set up a network to achieve many of the same goals as the 128 Venture Group Nohria studied; Nohria's group brought existing entrepreneurial and financial resources together to facilitate collaborative business ventures that would not have been possible without creating new network links. The group grew over time because participants and potential participants realized the value added its network provided; they realized the opportunities and benefits for themselves and others in expediting the communication needed to make new high-tech ventures profitable. TEW original participants saw the same thing—seams between organizations involved in counterterrorism. Although participants in Nohria's 128 Venture group sought out partners for collaboration via the network, actual collaborative efforts normally only involved one or two financiers and entrepreneurs; the number of participants in TEW collaborative efforts is significantly higher.

[106] Bardach, 4.

[107] Sullivan, 3 Mar 06.

The TEW outlook recognized that the problem extended beyond the purview of individual organizations and thus required a type of "cosmopolitan outlook" to facilitate network development.[108] The TEW agenda focused on enabling broad-based collaboration—setting up processes to provide better terrorism-focused analytical support to the EOC. Even before the first meeting, the organization had developed an early version of IPO; by continually revisiting the process and getting additional viewpoints, the collaborative analytical model emerged. By agreeing to collaborate on solutions from the beginning, TEW participants made themselves open to innovative ideas.

The Sheriff's Department technically "leads" the TEW, as part of the EOC. However, the collaborative mission of the TEW requires a different type of approach to get beyond parochial organizational thinking and achieve cross-functional and cross-agency coordinated efforts. In this case, the personalities advocating the TEW (initially Sheriff's Department personnel), did so based on their collective personal experiences, not only in emergency response, law enforcement and criminal investigation, but also prior experiences and academic studies in public policy, management, conventional military and special operations.[109] These broadly experienced personnel provided a core of meta-leadership, which inspired the organization's creative approach.

> Meta-leaders are able to accomplish the task, feeling and acting at ease even when engaging with people outside their professional domain or expertise, able to act comfortably in someone else's space and making others feel welcomed and accepted in theirs.[110]

The consensus-based TEW employed a different type of leadership, analysis, and organizational ethos.

Specifically, the IPO focus on all-inclusive participation in the analytical process affirmed the intrinsic value of each and every participating organization in the process. Without any one of the participating organizations being involved in the process, certain information may be missing from the analytical puzzle. However, with a combined,

[108] Nohria, "Information and Search in the Creation of New Business Ventures: The Case of the 128 Venture Group," 257.

[109] Sullivan, 30 Sep 05.

[110] Marcus, 46.

meta-analytical perspective (and guidance of meta-leaders), subtle spikes in otherwise insignificant indicators may be detected.[111]

> A warning such as the spike is only effective if its fits into our mental model of what is going on. As with the 'warnings' of Pearl Harbor, it can get swamped by the multitude of signals that fit our expectations, and thus be discounted as 'noise' in the system.[112]

When combined with indicators from other organizations, "noise" may tip off additional investigative resources or analytical lines of thought. By weighing all sources of intelligence, without overly weighting law enforcement information, the IPO process results in truly collaborative assessment. The process itself fosters collaborative culture and promulgates that ethos back into participating organizations. By reinforcing collaborative habits in participating organizations and individuals, the analytical process itself helps the network grow and sustain itself.

C. TEW NETWORK EVOLUTION AND IMPLICATIONS

Over time, networks evolve. This implies more than just a one-dimensional increase or decrease in the number of personnel or office symbols assigned. Evolution incorporates the dynamic nature of networks—the fact that they themselves comprise actors who participate in events or processes and make decisions based on a diverse array of factors. Although growth and expansion can be a part of evolution, the concepts exclude certain nuances of network change over time. In reality, it is possible for a network to grow and contract at the same time; different parts of the network may experience different types of change. Use of the broader "evolution" term in this study mirrors the distinction made earlier between cooperation, coordination and collaboration; collaboration is a more comprehensive concept, encompassing cooperation and coordination as sub-tasks. Applying this perspective to the TEW's collaborative network, it is appropriate to review not only the expansion of the network's participants in terms of numbers and effective operational reach, but also changes in network processes and products or outcomes. Tying collaboration and networking to social

[111] Marcus, 46-48.

[112] Perrow, 31.

network analysis ironically enables meta-analysis (across theoretical and methodological schools of thought) of how the TEW network links bridge organizational, functional and jurisdictional boundaries.

Focusing on network expansion and reach, the TEW case shows how a group of ingenious upstarts with vision accomplished more with less—more collaborative capacity with less organizational resistance. This bottom-up consensus-based network expansion contrasts sharply with top-down collaborative approaches. Top-down approaches, such as the creation of the National Counterterrorism Center and Department of Homeland Security, address personnel and structural issues, but do not necessarily overcome ingrained non-collaborative, "silo-based" thinking that slows or halts inter-organizational efforts. Marcus, et al, suggests three levels of cooperation: people-to-people, on-paper, and in-practice. Although the TEW duplicates some non-terrorist focused organizational structures (e.g., California's SEMS) "on-paper," the TEW's track record proves that its well-honed people-to-people and in-practice capabilities provide more than just an alternative means of information flow. The TEW network adds new analytical processes to the mix, so that the resultant network structure is not only stronger (via redundant relational connections) but also more resilient (via scalable links).

The TEW succeeds on all of these levels; however, because of its bottom-up approach, many of the formal "on-paper" details were worked out long after processes had been worked out between individuals and put into practice[113] Instead of using "hard power"-based executive orders to force information sharing, TEW meetings employed the "soft power" of outside experts and inter-personal connections to promote meaningful information sharing and combined problem-solving where organizations participate without uncomfortably sacrificing organizational authority. Although the TEW has little hierarchical pull on its own, its meta-leadership and collaborative processes have combined to produce organizational "soft power." With a proven track record, the TEW's newfound strength offers the potential for it to spur additional improvements in counterterrorism and emergency response.

[113] Marcus, 42-43.

TEW network expansion, however, is not without limits. For now, many TEW network relations are based on personal relationships. However, as the network expands, individuals will become less able maintain personal contact with their growing circle of collaborative partners. Lacking familiarity, organizations and individuals may fall back on their parochial tendencies. However, smart use of the TEW's scalable network to tap into other networks only as needed may avert potential complications as the number of individual TEW network links increases. So, in order to maintain and expand the network's reach, TEW leaders must continue to build upon the existing collaborative ethos; the same openness that enabled the network to grow from its humble beginnings will sustain the organization's current and future collaborative capacity.

TEW expansion has meant mostly an extension of operational reach. TEW links to other agencies at varying levels of government, or even in other countries, simply add to the resources available for the TEW. Of course, in other localities across the country, localities may not require such an extensive network to meet their terrorism readiness requirements. DHS's UASI initiative envisions dozens of TEWs in metropolitan areas across the nation. While this seems appropriate, it is important that local requirements be kept in mind as TEW-processes are emulated. Meta-analysis incorporating all-source information may be an appropriate *process* to support the threat assessment needs of other localities; however, TEW network structure as implemented in Los Angeles may not be necessary in all cases. In other words, the LA TEW's relative success should not be used to justify cookie-cutter duplication of TEW's across the nation without consideration of local variations. As in Los Angeles, allowing locally tailored process implementation in other US cities and metropolitan areas may limit organizational resistance to change and result in long-term collaborative success.

Wide use of the LA TEW model presents numerous opportunities for future research. Comparative analysis of TEW's may shed light on how collaboration occurs and how to foster collaborative capacity. Given the potential of the LA JRIC, it may be appropriate to revisit the case to assess the effectiveness of that organization and its relationship to the multiple TEWs it supports. Additionally, this study suggests analytical and leadership requirements specific to inter-organizational collaboration; further

investigation in this area may reveal education and training programs to support terrorist and non-terrorist related inter-organizational collaboration.

Within the scope of this study, however, the TEW demonstrates an example of organizational problem solving where a network facilitated collaboration in a wickedly complex and uncertain environment. The network's consensus-based innovation, collaborative processes, and meta-leadership helped the network evolve; these factors strengthened the collaborative ethos of the network and set the stage for success as the network meets current and future challenges. As a mechanism to increase local counterterrorism and emergency response capabilities, the TEW certainly succeeds. At a much broader level, the TEWs strategic outlook and innovations make the network a unique case, especially when contrasted to many top-down organizational restructuring efforts.

Like Paul Revere, the TEW's "rolodex" is brimming with network connections ready to be tapped and called to duty. Revere's midnight ride to pass early warning information and intelligence assessments would not have made history were it not for the way in which the network acted upon this information. For the TEW, the way in which its collaborative assessments are used may ensure success in modern revolutionary netwar as well as non-revolutionary emergency response. Lessons from TEW evolution provide insight into how to facilitate collaborative action and build collaborative capacity for the future.

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