# UNDERSTANDING THE ROLE OF INTERAGENCY COORDINATION IN NATIONAL-LEVEL MARITIME SECURITY

An examination of cross-governmental support for maritime security resilience through a collective action lens

by

Dane S. Egli

B.S., U.S. Coast Guard Academy, 1979

M.A., George Washington University, 1987

M.S., National Defense University, 2004

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This thesis for the Doctor of Philosophy

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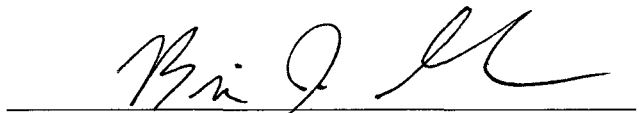
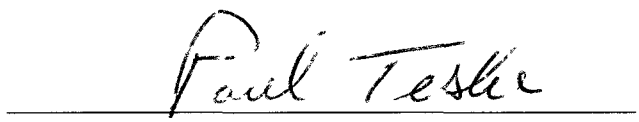
Dane S. Egli

has been approved

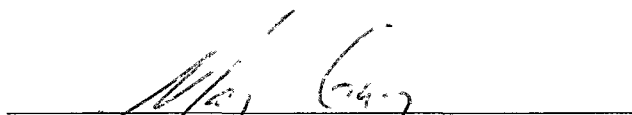
by



Brian Gerber

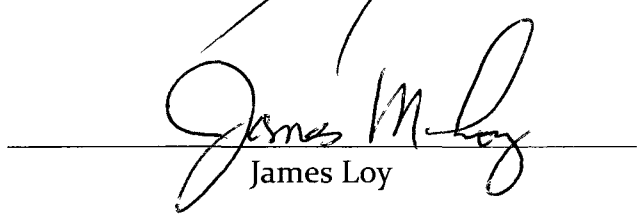


Paul Teske



Mary Guy

Gary Hart



James Loy

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Date

Egli, Dane S. (Ph.D., Public Affairs)

Understanding the Role of Interagency Coordination in National-level Maritime Security

Thesis directed by Professor Brian Gerber

## ABSTRACT

This study examines the most significant challenges in the practice of interagency coordination to support maritime security and offers potential collective action solutions to improve security, safety and resilience in the maritime commons. The central purpose of this study is to identify the major requirements to advance national-level maritime security policies—with a particular focus on interagency coordination—by conducting expert interviews, document reviews, and case studies.

The literature supporting maritime security policy and interagency cooperation covers military, cross-governmental, homeland security, academic, and commercial industry imperatives with a focus on the post 9-11 threat environment. Collective action theory provides the theoretical underpinning and analytical framework for a unique study of interagency coordination within the field of maritime security—making it highly relevant to the fields of homeland security and national strategy policy implementation.

The following themes are examined: (1) utility of collective action theory to support interagency coordination; (2) conditions under which interagency coordination supports maritime security objectives; (3) ability of maritime security players to implement policy under current constructs; and (4) remedies to close gaps in maritime transportation safety.

Major findings include: (1) lessons from this study in collective action theory and interagency coordination have practical utility and can be generalized to broader homeland security challenges; (2) further study is needed to add *systems*, *leadership*, and *structures* foci to collective action research; (3) awareness of America's economic dependence upon maritime commerce and the global supply chain is lacking; and (4) there is a need for a single national authority to implement existing policies, and strengthen maritime security resilience.

The most likely impact of this study will be to bring suggested remedies and systemic solutions to a fragmented and uncoordinated maritime security policy area within the U.S. maritime community of interest.

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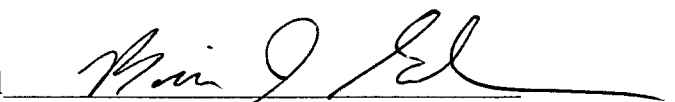
Signed 

Brian Gerber

# DEDICATION

I dedicate this thesis to my wife Annemarie who was a loving source of encouragement to stay on task; and certainly our children, Caleb, Corrie, Constance, and Colson who were—and remain—a significant joy and major source of life inspiration.

I also dedicate this study to my parents, Harold and Connie Egli, who provided the vision through their unwavering support and confidence, and have modeled for me what it means to live life with purpose and passion.

Finally, I extend my enduring gratitude to my siblings, Dan, Diane, Debra, and Denise, as well as Aunt Linda Stein, who have always offered their grace and hearts to me with indefatigable generosity.

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I wish to extend special thanks to my academic advisor, Dr. Brian Gerber, who provided strong support and thoughtful advice throughout the research process by offering timely guidance to significantly improve the quality of my thesis.

I am also indebted to the members of my committee: Dr. Paul Teske, Dr. Mary Guy, Senator Gary Hart, and Admiral James Loy. They encouraged me to follow my interests in this topic and offered new perspectives from their experience, urging me to become not just as consumer, but a producer of research. I am particularly grateful to Dr. Teske and Dr. Guy—as previous classroom professors—who helped me formulate my initial thoughts on this research topic and expanded my vision through their skillful instruction. I was also privileged to work with Senator Hart and Admiral Loy who brought a lifetime of public service and unique insights—from the front lines of national-level leadership—to help me examine the boundaries of national, homeland, maritime and transportation security.

I would be remiss if I did not thank the faculty and staff members of the School of Public Affairs—and my cohort classmates—who provided helpful feedback to stay focused on the destination. And I am particularly grateful to Dr. Peter de Leon and Dr. Chris Weible who provided encouragement along the way and challenged me to build a persuasive theoretic framework.

This study would not have been possible without the generous contribution of 35 interviewees—a collection of impressive experts across the country; as well as Coast Guard Headquarters, Office of Law Enforcement, especially Mr. Lou Orsini, who helped select maritime case studies and made critical research information available.

Finally, I would like to thank two other groups that invested in this effort; first, I am grateful for the generous support provided by my employer Integrity Applications Inc. who encouraged me to sail these waters; and secondly, I was inspired tremendously by the courageous friendship of my "band of brothers" at Woodmen Valley Chapel in Colorado Springs.

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## ACRONYMS

| Acronym | |
|---|---|
| AIS | Automatic Identification System |
| AMIO | Alien Migration Interdiction Operations |
| CA | Collective Action |
| CBP | U.S. Customs and Border Protection |
| CIA | Central Intelligence Agency |
| COCOM | Combatant Commander |
| CONOPS | Concept of Operations |
| COP | Common Operating Picture |
| COTP | USCG Captain of the Port |
| CN | Counter Narcotics |
| CNO | Chief of Naval Operations |
| COI | Community of Interest |
| CPR | Common Pool Resources |
| CT | Counter Terrorism |
| DEA | Drug Enforcement Agency |
| DHS | Department of Homeland Security |
| DOD | US Department of Defense |
| DOJ | US Department of Justice |
| DOS | US Department of State |
| DOT | US Department of Transportation |
| DTRA | Defense Threat Reduction Agency |
| EA | Executive Agent |
| FBI | Federal Bureau of Investigations |
| GAO | US Government Accountability Office |
| GCC | Geographic Combatant Commander |
| IC | Intelligence Community |
| ICC | Intelligence Coordination Center (USCG) |
| ICE | Immigration and Customs Enforcement |
| IED | Improvised Explosive Device |
| IG | US Department of Justice Office of the Inspector General |
| IMO | International Maritime Organization |
| JIATF | Joint Interagency Task Force |

| | |
|---|---|
| JTTF | Joint Terrorism Task Force |
| LPOC | Last Port of Call |
| MARAD | Maritime Administration |
| MDA | Maritime Domain Awareness |
| MDM | Maritime Domain Management |
| MIFC | Maritime Intelligence Fusion Center (USCG) |
| MLE | Maritime Law Enforcement |
| MOTR | Maritime Operational Threat Response |
| MS | Maritime Security |
| MTS | Maritime Transportation System |
| MTSA | Maritime Transportation Security Act |
| NCIC | National Crime Information Center |
| NCTC | National Counter Terrorism Center |
| NGB | National Guard Bureau |
| NTC | CBP National Targeting Center (Cargo & Personnel) |
| NIE | National Intelligence Estimate |
| NIMS | National Incident Management System |
| NPM | New Public Management |
| NPOC | Next Port of Call |
| NPS | New Public Service |
| NRP | National Response Protocol |
| NSC | National Security Council |
| ODNI | Office of Director of National Intelligence |
| OMB | Office of Management and Budget |
| ONI | Office of Naval Intelligence |
| OSD | Office of the Secretary of Defense |
| SLOC | Sea Lanes of Communication |
| SOP | Standard Operating Procedures |
| SVS | Small Vessel Security |
| TWIC | Transportation Worker Identification Credential |
| UN | United Nations |
| USCG | United States Coast Guard |
| USG | United States Government |
| USN | United States Navy |
| USTR | United States Trade Representative |
| WMD | Weapons of Mass Destruction |

# CHAPTER 1

# INTRODUCTION

Terrorist elements are intent on inflicting harm on U.S. interests, and security planners are actively studying potential vulnerabilities to the American homeland—especially within critical transportation systems—which includes the maritime domain and global supply chain (Flynn 2007, McNicholas 2008). And since the September 11, 2001 terrorist attacks, American officials have actively re-examined strategic priorities and policies in light of the unique threats to national security and homeland security within the maritime domain. A key challenge for policymakers is prioritizing the nation's maritime security activities among a virtually unlimited number of potential attack scenarios. Maritime security systems are of particular significance because they are vulnerable to disruption or attack, and play an essential role in the economic vitality of the nation (NSMS 2005, CRS 2007).

Over the past decade, the U.S. has dramatically enhanced its intelligence capabilities, both foreign and domestic, to counter terrorism and protect the homeland. However, threats to U.S. national security, including the maritime transportation system, continue to evolve. Notable maritime events, such as the seaborne terrorist attack in Mumbai, India in 2008 and the growing piracy

threat off the Horn of Africa, including the attack on the sailing vessel QUEST in February 2011, highlight relevant maritime threats to the United States. Interagency planners and policymakers recognize that the global maritime commons present a range of significant safety and security threats—including enemy naval forces, piracy, and using vessels to smuggle people, drugs, weapons, and other contraband—which could harm the U.S. and its vital interests. But, adversaries of America will also examine U.S. homeland vulnerabilities and seek to exploit the capability gaps and infrastructure weaknesses in the U.S. maritime security system, and maritime homeland defense—which underscores the need to better understand the state of interagency planning and coordination across U.S. agencies, departments, and organizations with maritime equities (NSCT 2006, Flynn 2007, GAO 2011-195, GAO 2011-661).

In a January 2002 speech, President George W. Bush noted, "The heart of the maritime domain is accurate information, intelligence, surveillance, and reconnaissance of all vessels, cargo, and people extending well beyond our traditional maritime boundaries" (NSMS 2005). Against this national security backdrop and complex environment of maritime challenges—with overlapping interests, uncoordinated players, and fragmented policies—this study examines the role of interagency coordination, and identifies the most critical variables

and policy options across the U.S. government that enable improved maritime security. This approach focuses on cross-governmental multi-agency collaboration that drives policy formulation and execution because the hypotheses of this study assert that significant improvements are possible by leveraging the benefits of interagency coordination. The whole-of-government approach (Page 2005, Kettl 2008) also serves as a harbinger for other independent variables that emerge in this study and contribute directly to the dependent variable—maritime safety, security, and resilience.

Collective action theory provides a useful tool to help identify and evaluate cross-governmental issues and potential remedies within the national maritime security community. This theory asserts that groups of individuals with common interests are more likely to act on behalf of their common interests—a framework shaped by several influential models, including cooperative behavior (Olsen 1965), common-pool resources (Schlager 2002), tragedy of the commons (Hardin 1968), logic of social dilemmas (Dawes 1980), and free riders (Olsen 1965, Hardin 1982). Collective action theory informs the research questions used in the interviews, as well as the hypotheses; and helps uncover interagency themes throughout the case studies and interviews.

By examining salient policy documents and conducting maritime case studies as well as interviews of subject matter experts, this research identifies

key elements within the area of interagency coordination relative to maritime security, execution of maritime policy, and expansion of global Maritime Domain Awareness (MDA).[1] Evidence shows—from interviews and case studies—that further maritime security analysis and research is needed to identify the areas of vulnerability across all elements of the U.S. government (Flynn 2007, NRC 2008).

The selected maritime case studies—involving high-profile merchant or recreational vessels interdicted within a national policy context—will illuminate the maritime security challenges associated with interagency coordination and their theoretical structures. This is a small-n case study approach employing interviews of subject matter experts, and careful examination of relevant documents, policies, and literature. The six case studies selected represent three maritime interdictions that occurred prior to promulgation of the new maritime policy in 2005—the National Strategy for Maritime Security (NSMS)—and three maritime cases from the time period after the policy was established. These six cases draw from a broad range of routine and non-routine operational scenarios to reflect the complex variables

1 Maritime Domain Awareness is the knowledge and sense-making of all activity in the maritime commons—on, under, or above the seas—that contributes to safety, security, economic and environmental requirements (NSMS, 2005)

as well as overlapping authorities and jurisdictions within the maritime environment, and the real challenges planners and policymakers face.

The seminal document that informs this study is the NSMS (Figure 1.1). To understand its genesis, in December 2004, the first national-level maritime security policy was introduced when the President signed National Security Presidential Directive 41 (NSPD-41), and Homeland Security Presidential Directive 13 (HSPD-13), which directed the preparation of the NSMS and its eight supporting plans. The NSMS, signed by the President in 2005, includes interagency and international dimensions, as well as public and private requirements; and is being implemented sporadically across the U.S. government (NSMS 2005, NRC 2008).

Since the maritime case studies selected for this study took place before and after the NSMS was promulgated, they will help identify the operational gaps and interagency imperatives this policy was intended to address. To date, there has been an uncoordinated and fragmented response to the emerging threats and lessons-learned in the maritime domain, which lacks the benefit of organized research and analyses needed to inform the way ahead (Flynn 2007, NRC 2008). Therefore, the research questions—informed and operationalized by collective action theory—were utilized with the six case studies and 35 expert interviews across the maritime security community, including

government agencies, commercial maritime industry, military departments, national-level policy makers, and academic institutions.

In review, this study employs collective action theory to address national-level, multi-agency, cross-governmental maritime security policy challenges—attempting to bridge two very different arenas. By drawing upon two arguably complementary—yet inherently different—approaches (an abstract theoretical framework and discrete national security requirement), the study addresses this apparent inconsistency. The literature reveals that collective action theory is largely applied to narrowly-bounded geographic, ecological, and social structures (Ostrom 1990, Schlager 2002); whereas the problem under examination—maritime security requirements—deals with organizing an expansive security regime based on a policy mandate to protect public-private safety interests (NSMS 2005, NRC 2008). Against this backdrop of conceptual and operational challenges this qualitative exploratory study will uncover the major findings of this study regarding interagency coordination and maritime security, as well as help evaluate the strengths and weaknesses of collective action as a theoretical framework.

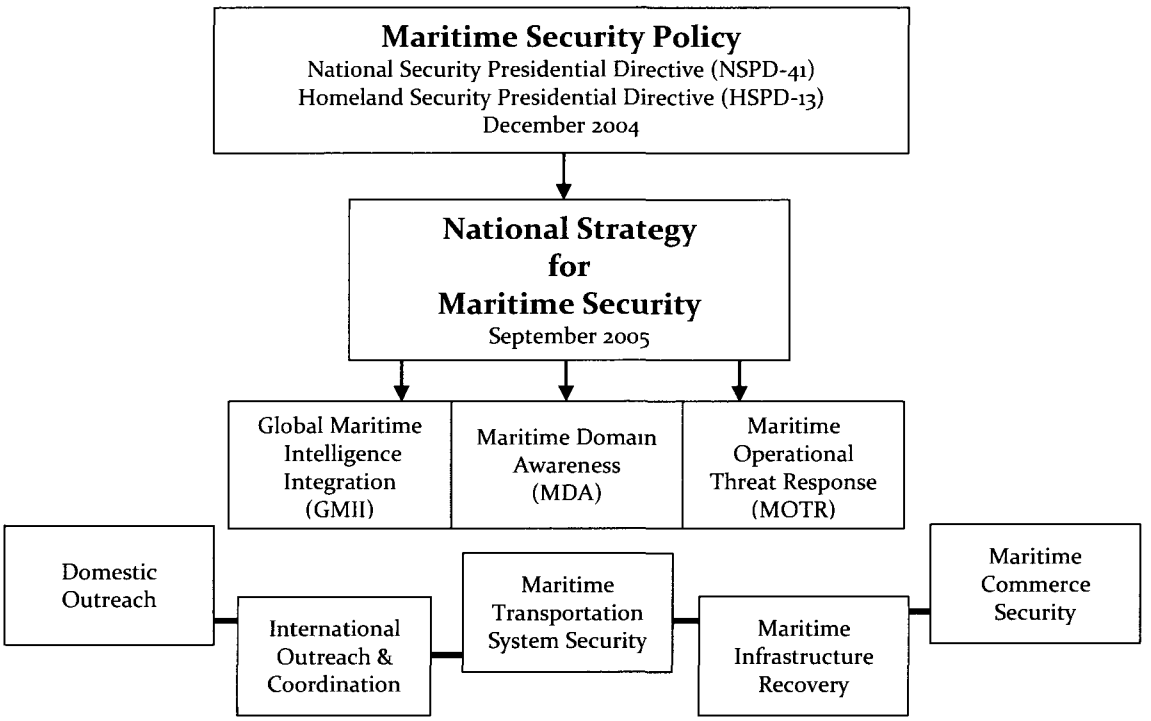


*Figure 1.1* National Maritime Security Policy [2]

## Structure of Dissertation

This dissertation consists of six chapters including this introduction. The second chapter provides an historical perspective of the global maritime commons, including the evolution of U.S. maritime security policy development, focusing on modern threats in the maritime domain, imperatives of the global supply chain and maritime transportation security. This chapter

[2] Three of the eight supporting plans have received strong interagency focus while the remaining five are less mature or undeveloped and therefore, are shown as separate and uncoordinated elements of the NSMS.

also highlights the central role of maritime commerce in connecting the ligaments of global and domestic economic systems, especially focusing on the importance of safety, security, and environmental requirements in U.S. ports, harbors, waterways, and coastal regions. Nine assumptions are suggested which offer explanations and antecedents to the research and assert the highly interdependent global supply chain and maritime transportation system.

The third chapter states the problem definition and presents literature reviews for both collective action theory and interagency coordination—laying the groundwork for the subsequent sections that establish the conceptual linkages of these two focus areas. The primary themes of collective action theory are introduced, drawing from the supporting areas such as public goods, tragedy of the commons, social dilemmas, transaction costs, free-riders, and bounded rationality. The evolution of multi-agency, cross-government interagency coordination is reviewed along with a contemporary focus on whole-of-government approaches. Further, in this chapter, a clear argument is made for the complementary intersection of collective action and interagency coordination (Table 3.1)—presenting 12 overlapping themes to highlight that public and private stakeholders make decisions in both areas, working in separate domains, while facing parallel collective choices. Chapter three closes

by presenting a summary of social science theories to cast this study in the broader public policy and public affairs context.

The fourth chapter outlines the research design employed, data collection and analysis methodologies. The data collection and analysis section shows that this study depends chiefly upon qualitative data collected from case studies, document reviews, and expert interviews, followed by narrative and deductive written summaries linked to research questions and hypotheses. The heart of this chapter is the list of 13 research questions which operationalize collective action theory; and 12 hypotheses that test the conditions and factors of interagency coordination in executing maritime security policies.

The fifth chapter presents the major inferences from six maritime case studies and 35 expert interviews; and distills the salient points relative to interagency coordination based on the research questions and hypotheses. The case studies were selected from a wide range of operational, law enforcement, and maritime security scenarios using routine and non-routine selection criteria, and time variables based on when the cases occurred—before or after the NSMS (2005). The next section summarizes the actual interviews of maritime security experts from across public, private, academic, industry, policy and technical fields and correlates those results with collective action-

interagency coordination precepts and test hypotheses. At the end of each section there is a summary (Tables 5.4 and 5.5) which provides qualitative analysis and shows linkages between interagency themes, research findings, collective action theory, and research hypotheses.

Finally, chapter six summarizes the major findings and implications of this study to advance maritime security objectives, specifically highlighting the value of collective action theory in addressing this thesis and utility for future research efforts. There is a comparative analysis of the case studies to examine the significance of their operational complexity, and timing (before and after the NSMS was promulgated). The final section offers major findings, suggested remedies, and recommendations to close the gaps uncovered during the research.

# CHAPTER 2

# BACKGROUND AND POLICY DOMAIN

## Historical Perspective

For the past 200 years the U.S. has enjoyed relative freedom of navigation and maritime trade routes as part of a global transportation system, influenced by actors such as the interagency, commercial maritime industry, and operating agencies such as the U.S. Coast Guard, U.S. Navy, and U.S. Merchant Marine—protecting people on the sea and protecting the maritime commons from threats delivered by sea. In recent times, and particularly in the past decade, threats to maritime security have evolved, and policies have emerged to address new maritime security requirements (Ullman 1983, GAO 2007, GAO 2011).

For example, the International Maritime Organization (IMO)—a permanent UN body responsible for international standards to promote maritime safety and prevent pollution from ships—took strong measures after the terrorist attacks of 2001 to expand its traditional regulatory focus beyond safety and environmental protection to include *security* considerations. More specifically, in 2004, IMO introduced a comprehensive security regime for

international shipping, including the International Ship and Port Facility Security (ISPS) Code, implemented under the International Convention for the Safety of Life at Sea (SOLAS). These international maritime security initiatives, in part, established a new emphasis on security in the global maritime commons and pointed to the need for national-level policies to directly counter maritime threats and enhance maritime security protocols in the homeland (SOLAS 1960, ISPS 2004).

Domestically, the National Maritime Security Advisory Committee (NMSAC) was established under the authority of the Maritime Transportation Security Act of 2002, and operates in accordance with the provisions of the Federal Advisory Committee Act (FACA). The NMSAC provides advice to the Department of Homeland Security (DHS) Secretary through the USCG on matters such as national security strategies and policies, actions required to meet security threats, international cooperation on security issues, and security concerns of the transportation industry (NSMS 2005, MTSA 2002).

In the past, sea-borne threats to America usually came in the form of foreign navies. However, modern threats come by way of self-propelled semi-submersible drug-smuggling vessels, pirates trying to hijack merchant vessels and disrupt the global supply chain, individuals who illegally enter our ports with the intent of committing nefarious acts, and transnational crime such as

smuggling contraband, including humans, weapons, and bulk cash (NSMS 2005, USN/USMC/USCG 2007, Allen 2008). This study highlights how the interagency process has adapted to face these challenges in the maritime domain by attempting to focus on collective efforts and coordination with maritime stakeholders in the military, law enforcement, and intelligence communities, as well as the commercial maritime industry.

## Maritime Security Imperatives

This study offers a critical understanding of national security imperatives beyond the *land* and *air* domains, focusing on the specific steps necessary to improve *maritime* security,[3] through stronger interagency coordination within the national context. This research opportunity will contribute directly to the improved theoretical and epistemological foundation of our nation's vital maritime transportation systems. There is a need—because of safety, security, economic, and environmental risk factors—for maritime security practitioners to systematically study this issue, shining an analytical light across multiple levels of government agencies, departments, and organizations, to better understand the theoretical foundation and benefits of further research relative

3 Maritime security involves the prevention of intentional damage through sabotage, subversion, or terrorism, and supports the protection of ports, vessels, and facilities (NSMS 2005).

to collective action theory and improved interagency coordination (NRC 2008, 144-147).

The security, environmental protection, and economic prosperity of America depend upon its ability to safely operate within the global maritime commons, ports, and waterways. Ships are *the* primary mode of transportation for world trade, and the U.S. maritime transportation system (MTS)[4] is vital to domestic and global economies. Globally, maritime trade constitutes over 80-percent of all international trade. With 95,000 miles of shoreline, over 25,000 miles of navigable waterways, 361 commercial ports, and a vibrant economic exclusion zone (EEZ), America conducts more than 95-percent of its commercial trade (total imports and exports) via maritime conveyances. The U.S. maritime transportation system, in turn, drives the global supply chain, and as the world's leading maritime trade nation, the U.S. contributes nearly 20% of the annual world ocean-borne overseas trade (CRS 2007, USN 2007, DOT 2008). Commercial vessels also carry more than 90-percent of the nation's foreign trade by volume and 85-percent by value, and nearly one-third of the U.S. Gross Domestic Product (GDP) is derived from maritime trade (DOT 2006, CRS 2007, USN 2007).

[4] The national Marine Transportation System (MTS) is a complex network of waterways, ports, terminals, intermodal connections, vessels, people, infrastructure, and support services interconnected with the public and private sectors (Allen 2008)

Tens of millions of shipping containers enter U.S. seaports every year surpassing $1.5 trillion in value (Rudzinski et al, 2010). U.S. ports, waterways, and vessels handle more than $700 billion in merchandise annually, and any disruption to this network would have a widespread impact on global trade and the U.S. economy (GAO 2011). U.S. seaports handle over two billion tons of domestic and international freight annually, and a terrorist attack in a major port could paralyze the maritime transportation system because it is an interconnected and interdependent network. By one estimate, the cost to the U.S. economy of port closures on the West Coast due to a labor dispute (in 2002) was over $1 billion per day for the first five days, rising sharply thereafter (Frittelli 2008). In addition to its economic significance, the maritime transportation system and global supply chain are vital to national security.

According to USG reports on waterborne foreign trade, the top 175 U.S. seaports moved over one billion metric tons of commerce in 2005, and over 95-percent in volume of North American foreign trade—such as commodities and foreign oil—arrived by maritime conveyances (DOT 2006). The Departments of Defense (DOD) and Transportation (DOT) have designated 17 U.S. seaports as strategically important because of their role in the event of major military deployments. And 80-percent of these strategic ports are loaded at privately-owned commercial facilities (Flynn 2004, Frittelli 2008). Clearly, international

trade, maritime transportation systems, global supply networks—and especially America's economic welfare—depend heavily upon secure maritime infrastructure and commerce, enabled by strong public-private collaboration within the global maritime commons (DOT 2006, USN 2007, USN/USMC/USCG 2007).

The maritime transportation system continues to expand and underwrites global and national economies. According to the American Association of Port Authorities, $1.3 billion worth of U.S. commerce passes through American ports daily (GAO 2011). Increasingly, U.S. corporations rely heavily upon "just-in-time deliveries"—highlighting certain vulnerabilities and "choke points:" 42-percent of U.S. container imports pass through the Ports of Long Beach and Los Angeles, California; and 52-percent of U.S. tanker imports flow through the Gulf of Mexico's Lower Mississippi Waterway and the Houston Ship Channel (Flynn 2004, DOT 2006).

U.S. seaports and waterways are not only vital economic arteries for the nation, but increasingly so for international partners as well. Every day, over 1,000 ships enter American ports; and 8,000 foreign-flagged vessels manned by 200,000 international merchant mariners, enter U.S. ports each year. Further, cruise ships visiting foreign destinations depart from 16 American ports; and the U.S. ferry system moves some 113 million passengers and 32 million vehicles

annually. Over the next twenty years, experts predict that the importance of maritime transportation and maritime infrastructures will continue to expand in the U.S. and global marketplace (NSMS 2005, NSS 2006, NSCT 2006, Allen 2008).

The oceans not only provide the sea lanes for world commerce, but are also a major source of food, minerals, and recreation for the nation. The U.S. has a vital national security and economic interest in the preservation and protection of resources in its 200-mile wide EEZ—the largest EEZ in the world, spanning over 13,000 miles of coastline, and containing over three million square nautical miles of ocean. The EEZ contains vital natural resources including fisheries, oil reserves, and minerals (NSMS 2005, UNCLS 1982).

Within this context of broad maritime security and economic variables that impact the global supply chain and maritime security resilience this study examines the most significant elements associated with interagency coordination—informed by collective action theory—among the principle maritime security actors in the U.S. government.

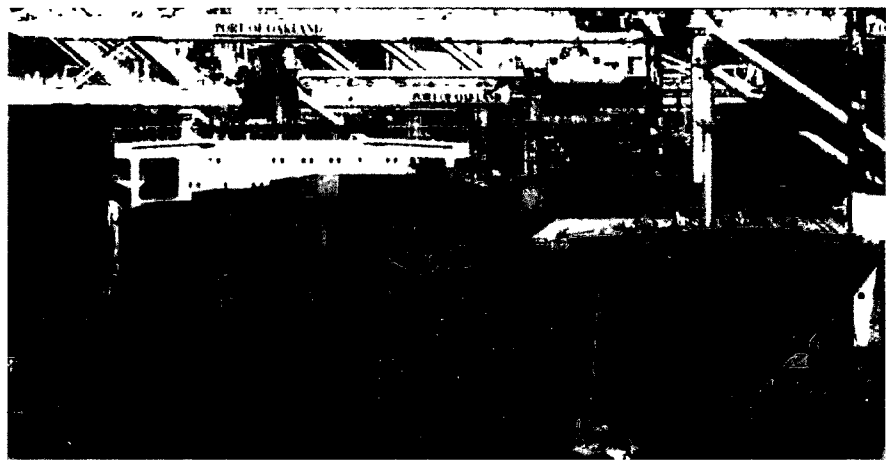

*Figure 2.1* The Maritime Transportation System in Action

## Basic Assumptions

Assumptions offer effective explanations and antecedents to one's research (Friedman 1984). They are basic facts and ideals which inform one's study, and help assess causal mechanisms within individual case studies (George and Bennet 2005, 139). The following assumptions are derived from the review of primary maritime security sources:

- U.S. national security relies heavily upon global transportation systems, including air, land, and maritime conveyances (USN 2007, DOT 2006).

- Since September 11, 2001, there has been a growing demand for maritime security policies, recognizing land and air domains have more mature security regimes in place (Ritter, Barrett and Wilson 2006, McNicholas 2008).

- There is a prevailing security threat—manifested in asymmetric terrorism—that requires improved interagency coordination and strong cooperation among all elements of the national security community (NSCT 2006, NRC 2008).

- In the U.S. there are 361 commercial ports that provide countless high value targets for terrorist organizations to exploit, including container vessels, bridges, chemical and nuclear plants, and waterfront facilities (Loy 2001).

- Maritime security—as a subset of national security—requires the collaborative efforts of government, industry, and academic institutions and organizations (NSMS 2005, NSS 2006).

- The commercial maritime industry is dependent upon secure trade routes and the global supply chain to provide services and support for the U.S. and global economies (NSPD-41/HSPD-13 2004).

- The maritime sector must operationalize national policy in a dynamic, ubiquitous, and interconnected joint military, interagency, multinational, and commercial environment (Ullman 1983, NSMS 2005).

- Effective execution of U.S. maritime strategy and policy requires the cooperative efforts of the public and private sector, built upon mutual trust, information sharing, and interoperability (NSMS 2005, Flynn 2007).

- The U.S. is an island-nation with proximity to oceans that have historically offered a sense of security. Over 90% of America's war fighting capacity flows from strategic seaports of embarkation (NSMS 2005, Flynn 2007, Frittelli 2008).

These assumptions establish the fundamental premise for the relationships between collective action theory, cross-governmental themes, operationalizing research questions, and maritime case studies (Appendix A). Once assumptions have been established for qualitative measures at the basic

level one can construct secondary-level dimensions, building upon these preliminary structures (Goertz 2006, 35). These maritime security precepts—focused specifically upon the role of interagency coordination—are supported by strong references and external validity, and help identify critical cross-governmental issues and definitions, and most importantly, lead to appropriate research questions and hypotheses.

Further, these assumptions are best understood within the context of a highly interdependent maritime global supply chain, which includes a dynamic network of vessels, people, cargo, infrastructure, ports, communications, and transportation nodes. As reflected in Figure 2.2, maritime trade represents a major security challenge because it takes place in the loosely-regulated maritime commons on a daily basis and is conducted by a domestic and international oceangoing fleet of government-sponsored, and private industry vessels that transport a variety of cargo—including an international network of shipping containers within an interconnected and highly-complex global maritime domain.

This security challenge is amplified by the vast openness of the global maritime commons and large number of crewmembers sailing on various vessels, including small unmonitored recreational craft, commercial fishing vessels, coastal freighters, bulk cargo carriers, and cruise ships—many carrying

crew, passengers, and individuals of various nationalities. The major commercial shipping ports of entry and countless number of non-commercial and un-monitored locations over 91,000 miles of U.S. coastline further highlight the nature of domestic maritime security vulnerabilities.

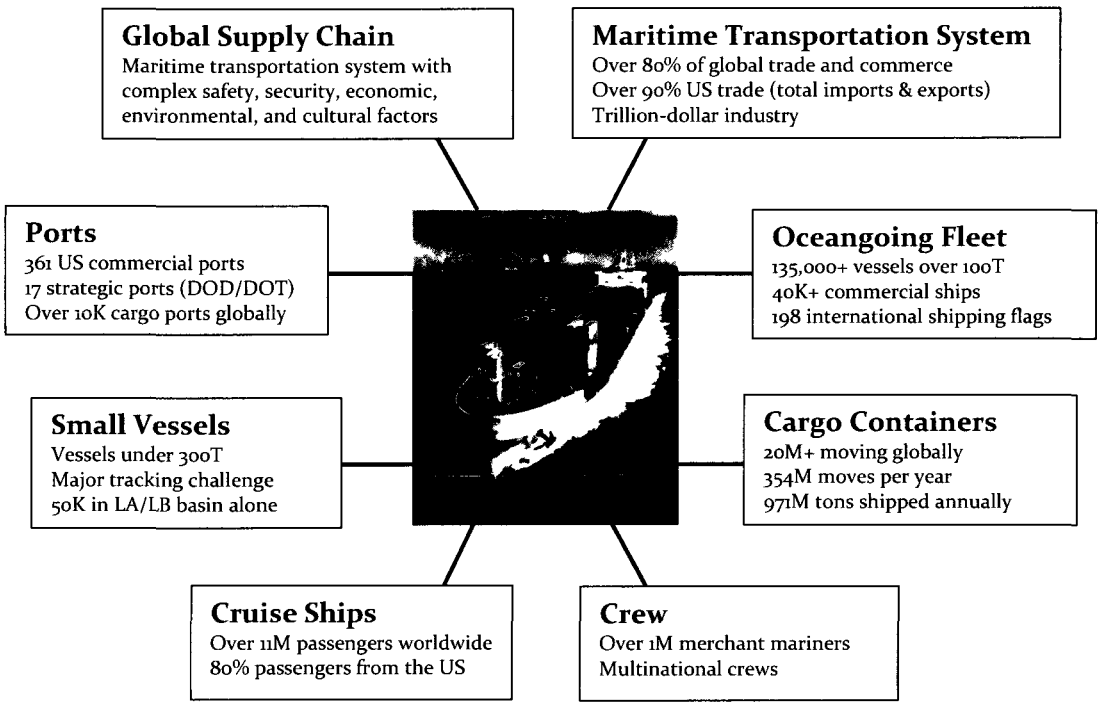


*Figure 2.2* The Maritime Transportation System of Systems

# CHAPTER 3

## RESEARCH PROBLEM & THEORETIC APPROACH

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The problem definition establishes the boundaries of this qualitative study in the context of maritime security policy and interagency coordination, introducing the problem under examination. Also, the problem—or need for the study—is framed within existing literature, addressing a gap in this field of study. Case studies, document reviews, and expert interviews are employed to provide historical context, document interagency experience, develop research questions, and test the hypotheses (Marshall & Rossman 2006, Creswell 2007).

| |
|---|
| National-level maritime security governance, policy guidance, and interagency coordination are fragmented, and therefore, impede the ability to adequately secure maritime infrastructures and transportation systems in the maritime commons. |

*Figure 3.1* Problem Definition

The maritime security community of interest is a complex network, in which many operational, political, and policy actors with different goals, resources, and mandates participate to achieve their own goals. The diverse policy environment and loosely-regulated maritime industry—including

political structures, budgetary constraints, economic realities, and organizational cultures—impact the homeland and maritime security fields (Flynn 2004, NSMS 2005, DOT 2006). In the larger public policy field, a variety of theories and frameworks have been developed to explain the landscape of policy processes; including those that focus on functions, policy networks, institutional arrangements, and the systems within the policy process itself (Easton 1965, Brewer & deLeon 1983, Jordan 1990, Marsh & Rhodes 1992, Scharpf 1997, Ostrom 1998). This body of literature has contributed significantly to better understanding the range of policy structures; however, there remains an open field of study to examine maritime security systems and the role of government policy actors—specifically within the realm of cross-governmental interagency coordination.

Based on existing literature in this field, this dissertation examines the role of multi-agency whole-of-government efforts in advancing national-level maritime security policy within the context of a collective action theoretical framework. More specifically, it draws upon maritime case studies and expert interviews to answer the research questions, as well as test the hypotheses. This chapter also asserts a fundamental linkage between collective action theory and interagency coordination, laying the foundation for research findings and suggested remedies.

Maritime security as a public service enabled, in part, by interagency policy execution and—as reflected in the literature and demonstrated empirically in this study—is considered a *public good.* Public goods are goods that are hard (or impossible) to produce for private profit, because the market fails to account for their large positive externalities. National security and maritime security are viewed as public goods because they are "non-rivalrous, non-excludable public services; consumption of goods by one member does not reduce availability for others, and no one (agency or person) can be excluded from using the goods" (Samuelson 1954). And *collective action* suggests that groups "share intentions" regarding public goods through shared activity that requires "common knowledge" to support the provision of public services (Gilbert 1989)—in this case, maritime security.

Following this argument, maritime security is a *public good* which—if not addressed in a coordinated manner—will suffer the potential shortfalls raised by collective action themes such as tragedy of the commons, prisoner's dilemma, free riders, principal-agents, focal points, bounded rationality, and common pool resources (Olsen 1965, Hardin, G. 1968, Dawes 1980, Hardin, R. 1982, Ostrom 1999, 2000, 2002, Schlager 2002). Further, while collective action literature often targets issues as "people problems," there are many examples where collective choice involves organizations because collective action is

rooted in *relationships*—among individuals and institutions (Ostrom 1990, 1999, 2000, 2002). Therefore, this theoretical framework supports the examination of collective behavior among individuals as well as organizations and agencies. And this study places a particular focus on the conditions and factors under which cross-governmental multi-agency interaction and coordination does and does not occur, evaluating the subsequent impact on the ability to provide maritime security for the homeland.

At its core, this study examines a collective action problem involving public and private groups operating in a shared domain—the maritime commons. Some actors are unaware or overlook the maritime security imperatives while other groups focus on the challenges, yet overlook or fail to enlist the cooperation of potential collaborators. To further understand the variables involved in maritime security, this study examines potential hindrances to collective action such as communications, negotiations of agreements, and monitoring responsibilities.

Finally, this study does *not* attempt to leverage collective action theory to achieve a desired outcome, because this theory—as with other analytical tools and models—is a "neutral" epistemological framework being employed in this qualitative study to operationalize research questions, test hypotheses, and verify research findings against existing disciplinary knowledge (Greco & Sosa

1999, Crawford & Jarvis 2001). Collective action theory—as an emerging framework with gaps that will be explored in this study—is also utilized to help uncover the conditions and circumstances under which interagency coordination does or does not occur within the maritime community of interest (COI). Drawing upon the elements of collective action theory, this study identifies themes, conditional effects, and circumstances (within and among federal agencies) that support the most important maritime security objectives; and offers suggested remedies and recommendations to overcome policy hurdles based upon research findings. The following two sections examine the literature and principles surrounding collective action theory and interagency coordination.

## Collective Action Theory Literature Review

Collective action theory is concerned with the provision of public goods through the collaboration of two or more individuals, and the impact of externalities on group behavior. The foundational work in collective action was Mancur Olson's, "The Logic of Collective Action: Public Goods and the Theory of Groups" (1965). The logic of collective action involves the conflict between individual interests and achievement of shared interests for a group of individuals or organizations; and has enabled society to produce and distribute

a great variety of goods. Groups of individuals with common interests are expected to act collectively much as individuals may act on behalf of their personal interests, following the premise of rationale self-interested behavior; but in reality, individuals do not always act voluntarily to achieve the common interest unless there is coercion or incentives to compel action (Olson 1965, Ostrom 1990, Donahue & Zeckhauser 2006).

Historic literature portends the principle of collective action, being recognized as far back as Plato's *Republic* where there is an argument against obedience to the law if only one can escape sanctions for violations. Arguably, Adam Smith's (1776) assertion of the "invisible hand"—that ensures sellers are competitive rather than in collusion—is an economically important element of the logic of collective action. The back of the invisible hand deters the temptation of price collusion, thereby influencing producers to be creative. Even Hume (1739) seems to invoke the collective action theme when he describes the action of two neighbors who "agree to drain a meadow, which they possess in common" because of a common understanding; yet the same action would be nearly impossible with a large group trying to "concert so complicated a design."

Further, John Stuart Mill (1848) alludes to collective decisions in his defense of laws to require maximum hours of work. He claims that all workers

would benefit if the workday were shorter, but individual workers would be better off working extra hours if most others did not. Therefore, the only way to benefit from the reduced workday would be to make it illegal to work longer than a certain number of hours a day. And Pareto (1935) refers to collective action logic when all individuals refrain from a certain action that all members of the community benefit from; and if all but one member continue refraining from the action, the overall loss is minimal; whereas the one individual who chose to act may enjoy a personal gain far greater than the loss incurred as a member of the overall community. This argument is often framed for a negative case such as pollution or smoking, but it has positive applications as well. In the case of maritime security, the action might be the collective efforts of the cross-governmental agencies and departments.

Most collective action is based upon voluntary agreements among people or groups; however policy analysts often deal with legitimate coercive powers over private actions (Wiemer & Vining, 2005, p. 54). The literature suggests collective action or "collaborative governance" (Donahue & Zeckhauser 2006), may help understand the nature of maritime security challenges and the role of interagency coordination in the maritime commons.

Since the foundational work of Mancur Olson (1965) the concept of collective action has received significant application across the social sciences.

Collective action problems most often occur when individuals, as part of a broader group, select strategies generating outcomes that are sub-optimal from the perspective of the group. The challenge of collective action is finding ways to avoid deficiencies and move closer to optimal outcomes. To that end, public choice theorists have focused primarily on those collective action problems related to public goods, common-pool resources, and club goods (Buchanan 1972, Mueller 1997).

In the case of a market-produced private goods, the focus is generally on some attribute that provides a benefit—the flow of goods and services that one individual appropriates. And consuming these goods is generally not accomplished in a shared manner. The separation of production, personal appropriation and use, are basic reasons that private goods "are not plagued with the panoply of collective action problems" normally addressed (Ostrom 1998, 2000). Finding the right mix of incentive-compatible institutional arrangements to yield optimal outcomes and acceptable rules to define the boundaries of collective behavior is difficult. Further, creating institutions to facilitate exclusion can further complicate collective choice mechanisms. Ultimately, these challenges must be solved—whether the environment is fisheries, clean air, public lands, or the maritime commons—by those who wish

to efficiently utilize an array of common-pool resources over the long run (Ostrom, Gardner & Walker 1994).

Social dilemmas occur whenever individuals or groups in interdependent situations—as this study examines within cross-governmental interagency coordination—face choices in which the maximization of short-term self-interest produces outcomes that leave all participants worse off than feasible alternatives. Said another way, social dilemmas involve large numbers of situations in which individuals (or agencies) make independent choices under interdependent conditions. In public good dilemmas all those who would benefit from the provision of a public good—such as pollution control, weather forecasting, port security, maritime safety—find it costly to contribute and would prefer that others pay for the goods and services. And if everyone follows this utility-maximizing free-riding instinct, then the good is not provided or is mismanaged or underprovided. Yet, everyone would be better off if all players contributed (Samuelson 1954, Ostrom 1998, 2000).

Olson based his CA analysis on Samuelson's theory of public goods—Samuelson (1954) observed that some goods, once they are made available to one person, can be consumed by others at no additional marginal cost, a condition called "joint supply," because one's consumption of the good does not impact another's consumption. There is a natural tendency toward free-

riding on the provision of such goods; and some examples include radio broadcasts, national defense, clean air, and maritime trade. If any of these goods are provided for anyone, they are de facto provided for everyone, resulting in the impossibility of exclusion (Stanford 2003).

One can see collective choice social dilemmas in many aspects of life leading to decisions ranging from global events down to routine family affairs. These problems surface in many different forms and names, including public-good or collective-good problems (Samuelson 1954, Olson 1965), the free-rider problem (Grossman & Hart 1980), moral hazard (Holmstrom 1982), and tragedy of the commons (Hardin 1968). And within contemporary scholarship, the prisoners' dilemma—demonstrating why people may not cooperate even if it is in their mutual interest to do so—is a notable social dilemma with collective action implications (Dresher 1961, Poundstone 1992).

The prisoner's dilemma (Hardin 1971, 1982) provides logic structure for collective behavior and free rider cases. In this context, collective action is essentially a "large-number exchange" where each actor or agency exchanges some effort or resources in return for benefiting from some collective provision. One can also "cheat" in a large-number exchange by free riding on the contribution of others, whereas such "cheating" in a small-n case would be

considered illegal—requiring one taking from another without exchanging something in return.

There are often incentives to try to free ride on the efforts of others; one's personal benefit from having the group contribute is normally far greater than the status quo benefit of having no one contribute. Still, one's benefit from a single contribution may be limited; therefore one individual—and possibly everyone—has an incentive not to contribute and to free ride on the contributions of others. If we all attempt to free ride, however, there is no provision and no "ride" (Olson 1965, Hardin 1982).

Over the past twenty years, researchers have examined collective action theory in the context of "acting together" (Gilbert 2006), which can be extended to maritime security policy and interagency assessments. The concept of "joint commitment" emphasizes a unique contribution to a common cause, where taking ownership for the action builds organizational solidarity over time. Further, some studies (Gilbert 1989, 2006) emphasize that the heart of collective action is the participant's "we-intention," which animates the actions of a group through collective intentionality, while other literature proposes that two groups "share an intention" through collective activity that requires "common knowledge" between participants. The question of mutual obligations and common group behavior contributes to contemporary

examination of collective action theory (Gilbert 1989, Bratman 1993, Gilbert 2006, Searle 1990).

Other theories also provide a useful reference point for collective action. For example, rational choice theory views the universal actions of citizens, politicians, and public servants as consistent with the actions of short-term maximizing producers and consumers. The primary elements—a self-interested actor, competition among producers, and a largely unregulated market—define this neoclassical economic model, which has application across wide areas of public policy and social sciences. From a safety and security viewpoint, this can help explain the actions of interagency stakeholders—by viewing them as utility maximizers with varying degrees of commitment to public interests, providing common pool goods and services (Tullock 1965, Downs 1967, Niskanen 1971, Buchanan 1972, Becker 1978).

Elinor Ostrom (1990) offers an integrated approach that helps frame the maritime domain as an environment of common pool resources drawing on public choice theory. She asserts that "social dilemmas" occur in all areas of life, including when trusting others to cooperate in a long-term endeavor, and also in an interdependent situation facing choices where utilitarian short-term self-interest prevails, leaving all players worse off than when they started. In a public-good social dilemma, some of those who benefit from provision of a

public good (pollution control, national security, clean water, and weather forecasts) consider it too costly to contribute and prefer to "free ride," allowing others to pay for the goods and services. Although all actors would be better off if everyone contributed, the public goods may go unprovided or underprovided (Ostrom 1990). This is an issue of growing concern for analysts and practitioners alike, and although public and private control has been suggested, both sectors struggle to manage the public good, common-pool resource challenge (Ostrom 2000, Schlager 2002). Building upon these themes, how does the literature point to the need for collective behavior within the interagency to support maritime security as a public good?

In the public sector—as in the maritime commons—some transactions may lead to a market failure, where uncoordinated "markets" driven by parties working in their own self-interest are unable to provide sufficient goods or services. These issues are known as "public goods problems," and there is extensive debate in the literature on how to measure their significance to an economy or community, such as the global commons (Baumol 2002). Examining the relationships among the stakeholders involved in a maritime event may help measure the relative contribution to national security made by various parts of government. And viewing maritime security as a public good may offer solutions in "redefining security and carefully examining what factors

motivate individuals and organizations to make collective contributions" under various conditions (Ullman 1983, Bernheim, 1986).

The literature reveals that maritime security is the collective obligation of a dispersed community where services that benefit everyone are sometimes delivered well and in other cases, in an uncoordinated manner (NRC 2008). Maritime security is also a significant challenge to the international community where no two countries face exactly the same impacts or costs from a breach in maritime security; and no country can unilaterally take effective action to manage the complexity of maritime risks. To tackle the problem, a new level of interagency coordination is required because maritime security is a critical global issue—and collective action approaches can potentially reduce the associated transaction costs (NSMS 2005, NRC 2008).

This study argues that maritime security—like national defense, law enforcement, lighthouses, and clean air—is a public good. Public goods are goods that are hard—or even impossible—to produce for private profit, because the market fails to account for their large beneficial externalities. Since public goods are non-rivalrous and non-excludable,[5] incentives are needed to motivate participation, and collective behavior may not occur even

[5] Non-rivalrous means the public good's benefit fails to exhibit consumption scarcity; once it has been produced, everyone can benefit from it without diminishing others' enjoyment. Non-excludable means that once it has been created, it is very difficult, if not impossible, to prevent access to the public good or service (Weimer & Vining, 2005).

when large groups with common interests exist (Weimer & Vining 2005). An important factor to consider is how transaction costs and benefits impede or foster social coordination, evaluating how causes and consequences interface with organizational coordination challenges (Samuelson 1954, Medina 2007, Rainey 1997).

The general concept is that when people who work together share a sense of identity and some level of dependence on the resources in question, and they also share norms and goals, they are more likely to develop institutions suitable to address the public good or common pool challenges—and work together. In other words, "they are more likely to overcome self-interested obstacles to collective choices, the temptation to be a free-rider, and appeal of cashing-in and defecting, and engage in collective behavior" (Ostrom 2002, 385). Sharing a sense of identity builds solidarity as well as some expectation of a shared future. These are important variables in the development of trust and reciprocity, which are essential ingredients in forming cooperative relationships (Ostrom 1998).

## Interagency Coordination Literature Review

In parallel with the review of collective action theory, it is important to examine relevant references regarding interagency—also referred to as whole-

of-government or cross-governmental—coordination among federal agencies, offices, and departments in the maritime security policy domain. As Dwight Eisenhower remarked at the end of his career, "although organization cannot make a genius out of an incompetent, disorganization can scarcely fail to result in inefficiency and can easily lead to disaster" (Eisenhower 1963). The U.S. government organizes and reorganizes itself across federal agencies in order to centralize—in some cases—and de-centralize in others, seeking to improve the role of the interagency and execution of national governance (Daalder and Destler 2001). The literature reveals that lack of multi-agency cross-governmental cooperation and interagency coordination as it relates to implementation of national-level policy—particularly in the national security field—represents a "continued vulnerability of the maritime transportation system" (Flynn 2006).

We know that national and homeland security analysts struggle to forecast security risks—especially when faced with ill-defined and asymmetric threats in the maritime domain—because conducting threat assessments is a highly uncertain process (Andreas 2003, NSMS 2005). Major security challenges, such as preventing an attack, asserting interagency cooperation, or deterring a breach in transportation systems, make maritime security a complex puzzle because, at any one time there are tens of thousands of ocean-

going vessels plying the oceans of the world. Oftentimes, limited information is available about their movements, the vessel, crew, or cargo (Ritter, Barrett, and Rosalyn 2006, DOT 2006, USN 2007).

There is a significant body of literature addressing the criticality of whole-of-government or interagency coordination in a broader context, which can be applied to maritime security, drawing from various references, including journal articles, congressional testimony, and government reports. This review targets the unique role of interagency coordination in supporting improved maritime security, as well as the threats, opportunities, gaps, and systemic challenges that can be identified with the assistance of collective action theory and supporting research. For the public and most government agencies, the maritime domain is viewed as a highly-complex system characterized by overlapping authorities and jurisdictions, and a wide range of operational and legal oversight responsibilities (NSS 2006, NRC 2008). And there is a wealth of expert congressional testimony, media reports, and public documents that highlight the uncertain and often-conflicting nature of this issue.

Within this general context, the goal of interagency coordination is to improve the effectiveness of cooperation, planning, and partnerships among federal, state, regional, tribal, and local government agencies, organizations, and departments (NSS 2006, NRC 2008). The challenge is reflected in the

confusing labyrinth of policies, legislation, departments, and authorities that comprise interagency maritime activity; and the fact that the interagency itself is a collection of public actors which is largely autonomous in assigned roles and missions.

For example, when the Congress and Bush Administration were considering formation of the Department of Homeland Security in the wake of 9-11 terror attacks, it found that the responsibilities for homeland security functions were widely dispersed across the government. The number of federal departments, agencies, and offices involved in homeland-related tasks was nearly impossible to quantify (Daalder & Destler 2001, 5-6, Kettl 2004). And according to the Office of Management and Budget, "nearly 70 agencies spend funds on counterterrorist activities—and that excludes the Defense and State Departments as well as the intelligence community" (OMB 2001). The organizational and political scope of the interagency process can be overwhelming to those inside or outside government.

Christensen and Laegreid (2007) discuss "whole-of-government" initiatives as a reaction to the negative effects of New Public Management (NPM) reforms such as structural devolution, "single-purpose organizations," and performance management, but also as a reaction to a more uncertain 21st century security environment. Despite widespread support for a whole-of-

government approach, several issues require careful consideration. Areas of potential difficulty include accountability for publicly-funded activities, overcoming silos created by "departmentalism" or vertical styles of management, and balancing interagency participation with the effect of "too many hands"—which yield fragmentation and lack of coordination. Further, and largely missing from much of the public administration literature, is attention to the role of interpersonal relationships and individual behavior as they impact the organizational values, ethics, and culture of the interagency process (Hunt 2005).

Within the U.S. government, the National Security Council (NSC) plays the central coordinating role for the interagency process and cross-governmental policy formulation; and within the maritime community of interest (COI), it overcame institutional and cultural challenges to publish the first national-level maritime strategy (NSMS 2005). This document reflects the demanding requirements of interagency coordination across multiple functional areas to bring together communities of experts, policy makers, politicians, and bureaucrats to address maritime governance. Overcoming the obstacles that hinder greater interagency coordination remains a challenge as revealed in case studies and national security policymaking throughout U.S. history (Allison 1971, NSMS 2005, NRC 2008).

The interagency challenge often revolves around building organizational consensus—among a constellation of government agencies—that can endure the interagency policy formulation process, "where negotiations of the instrumental perspective are based on the notion that the public apparatus is internally heterogeneous, with different units having different structures, roles, functions, and interests" in the interagency process. Conversely, according to the hierarchical perspective, political and administrative leadership is homogeneous and there is agreement about the use of interagency measures—often leading to a top-down directive style within government (March & Olsen 1983).

Interagency, whole-of-government, approaches are generally viewed in a positive light; however it is important to examine potential conflict areas. For example, the "silo mentalities" that interagency coordination is designed to confront often exist for good reasons (Page 2005). Well-defined vertical and horizontal organizational boundaries should not be viewed solely as a symptom of obsolete or obstructionist-thinking, but as an established division of labor and specialization that may enable the functioning of modern organizations—presaging that interagency initiatives will be difficult to implement. Moreover, coordinating horizontally across agencies and departments is a very time- and resource-consuming activity; and raises other difficulties, such as unintended

risks, ambitious agendas, and uncontrolled consequences (Pollitt 2003, Perry et al. 2002).

Strategic links and interactions involving political design and management, by contrast, arise when actors seek to forge intentional connections among institutions in the interests of pursuing individual or collective goals (Ostrom et al. 2002). Some exercises in political design are motivated mainly by a desire to enhance institutional effectiveness, or for the purposes of this study, to improve interagency coordination by means of collective behavior. Efforts to nest regional regimes (e.g., the various regional maritime working groups) into larger or more comprehensive arrangements (e.g., the overall law of the sea or national maritime strategy), for example, are viewed as initiatives intended to promote the effectiveness of the smaller scale systems by integrating them into larger systems. Other strategic multi-agency cross-government links reflect conscious efforts to cope with the side effects of arrangements established for other purposes (Wilson 1989, Raach & Kaas 1995, Donley 2005).

In the United States, there is growing interest in collaborative public management that is focused on managing networks in public administration, on the collaboration process, and on the design and implementation of cross-sector interagency coordination (Agranoff 2006, Kettl 2006, McGuire 2006,

Thompson & Perry 2006). Building on this historical review of interagency coordination—a primary point of analysis for this dissertation—this study examines maritime security imperatives (with the help of maritime case studies and expert interviews) to uncover the elements of collective action theory that are most relevant in answering the study's research questions. To further understand the genesis of multi-agency coordination and cross-governmental attempts to address the complexities in government, the next section establishes the theoretical connection between collective action and interagency coordination themes.

### Intersection of Collective Action and Interagency Coordination

The central argument of this study is that when faced with the challenges and complexities of interagency coordination in the support of maritime security, new operational and policy remedies are needed to leverage the benefits of collective action. In addressing the intersection of interagency coordination and collective action in the maritime domain—similar to interpenetrability (Kettl 2002) and cross-scalar (Ostrom, et al 2002) issues in the public arena—one sees the need for further study of public organizations and modern policymaking processes (Jenkins-Smith 1990).

Building upon a review of academic and professional literature, this section will inform the subsequent research questions, suggested hypotheses, and research design on the subject of maritime security—by providing an integrated interagency, cross-governmental approach, within a collective action framework. To address the complications and multiplicity of interagency coordination this section is informed by collective action precepts, and establishes theoretical linkages between these two key areas of study.

Events such as the September 11, 2001 terrorist attacks and aftermath of Hurricane Katrina show that public policymakers struggle with the same large-scale puzzles of years past, and our government structures remain ill-matched for the problems they face (Kettl 2006). Over the years, key stakeholders within the interagency have been granted increased decision-making autonomy while operating within separate organizations, agencies, and domains—resulting in collective action barriers and negative impacts on interagency coordination. The research that follows—case studies, document reviews, and expert interviews—will provide the analytical details to test this assertion, and the suggested hypotheses.

Drawing from various theoretical frameworks, the interface of collective action and interagency cooperation underscores the need to overcome three broad tendencies within public policy in general and the maritime domain in

particular: (1) ad-hoc approaches to policy formulation and analysis (Viteritti 1982, deLeon 1988), (2) the inability to identify the complexity of joint actions (Pressman & Wildavsky 1973, Kettl 2002), and (3) complex governance chains that strain accountability systems (Romzek & Dubnick 1987, Ingraham 2005). These realities serve as a reference point in the further linkage of collective decisions and interagency coordination imperatives.

While not necessarily explained by the existing theories, the elements of collective action in large measure support the justification for the form of governance we observe in America and elements of multi-agency interaction. People engage in collective action for mutual defense, homeland security, child rearing, environmental protection, and many large-scale activities where individuals or agencies do not have strong relationships with each other—as we see in the interagency—and therefore, suggests that: (1) there are ways to impact the incentives of group members to make it worthwhile to contribute; (2) motivations other than utilitarian self-interest are involved; and (3) interagency players in seemingly collective action events fail to understand their own interests (Buchanan 1972, Hardin 1982, Donley 2005). All of these scenarios reflect the parallel structures that exist in the interagency and collective action domains.

When collective goods such as maritime security can be supplied by government elements within the interagency, maritime stakeholders—public and private—observe decisions being made that reflect "social dilemmas." Social dilemmas occur whenever agencies or individuals in interdependent situations face choices in which the maximum benefit of short-term self-interests yields outcomes which leave all participants worse off than feasible alternatives: i.e. if everyone followed the status-quo, the public goods (maritime security) are not provided or are under-provided; and everyone would be better off (more safety and security) if all elements of the interagency were to contribute (Ostrom 1990, 2002). One can see the implications to maritime security factors that must be addressed by the interagency as potential public goods in the homeland and global commons: information sharing, intelligence analyses, international collaboration, transaction costs, private industry participation, cross-domain solutions, policy formulation, etc.

Social dilemmas occur within the interagency, but do not necessarily conform to collective action terminology: public good or collective good problems might be called "collective security;" shirking, free-rider problems, or moral hazards could be "services-in-kind" provided to another agency; and "tragedy of the commons" might be referred to as "lack of teamwork." But the reality is that organizational survival within both constructs (interagency

cooperation and collective action) depends upon a dynamic pursuit of both self-interests and cooperation—practical reciprocity to solve operational "social dilemmas." Within the maritime context, this study examines the collective choices of the interagency and determines where barriers exist and what remedies are available. As behavioral scientists and political philosophers have long observed—and one expects to see validated within this study—human nature is a complex mixture of pursuit of self-interests, compromise of internal norms, and adherence to enforced rules. These observations indicate potential common ground for collective action and interagency coordination within the maritime security policy arena.

Rational choice theory offers a helpful resource for understanding humans as utilitarian, short-term maximizers within the interagency and collective action context. In experiments, cooperation levels for most individual, finitely-repeated social dilemmas exceed the predicted levels and are affected by variables with no theoretical role in affecting outcomes. Further, field research indicates that individuals consistently engage in collective behavior to provide local public goods or manage common-pool resources without an external authority to offer inducements or impose sanctions.

This study examines collective action variables that incentivize cross-governmental organizations to achieve the highest-possible levels of

cooperation within the interagency; and how certain actions or inactions—conditions and factors—identified in case studies and expert interviews, impact achievement of key operational goals and policy objectives in the maritime COI.

Further evaluating the nexus of interagency coordination and collective action frameworks, Ostrom (1998) suggests the need to develop a behavioral theory of "boundedly rational and moral behavior." As one expects to observe in the research phase regarding interagency characteristics, behavior in social dilemmas is affected by many structural variables, including size of groups, heterogeneity of participants, dependence on benefits received, monitoring techniques, and the information available to participants. Many of the current public policy analyses are based on the assumption that rational individuals are "helplessly trapped in social dilemmas from which they cannot extract themselves without external inducement or sanctions." Yet, policies based on the assumptions that individuals (or agencies) can learn how to devise tailored rules and cooperate conditionally when they participate in the design of institutions affecting them are more successful in the field—as opposed to a centralized authority (Olzak 1989, Ostrom 1998, 2000).

Within the interagency, the collective action challenge raised by social dilemmas is to find ways to avoid inefficient (Pareto-inferior) conditions and

move closer to the optimum. For example, to incentivize stakeholders across the interagency, contributors who support strategies in some fashion might receive a "cooperators' dividend" equal to the difference between the predicted outcome and the results achieved. Further, there are structural factors that surface in both areas which must be considered when studying collective action and interagency cooperation (Ostrom, Gardner, & Walker 1992, Ostrom et al 1999).

Structural variables often dictate the likelihood of participating in collective action; some of those factors are: (1) group size; it's easier to catalyze cooperation with face-to-face interaction; (2) symmetric interests and resources, so arriving at agreements regarding shared responsibility would not be difficult; (3) ability to monitor or enforce agreements between parties; (4) conformance to previous agreements is easy to verify, and (5) during meetings, participants can influence members who don't comply (Ostrom 1990). Further, event analysis suggests other variables such as duration, number of participants, and issues of definition, measurement, and methods of estimation and predictions. And viewing collective action as a process involves factors such as time, sequence of repeatable events, and how events unfold over time (Olzak 1989).

As summarized in Table 3.1, these literature reviews suggest 12 overlapping themes of collective action theory with interagency cooperation: transparency, rationality, reciprocity, cooperation, communications, culture, investments, research, field experience, trust, institutions, and policy implications; and the next section provides a brief primer for each variable:

### *Transparency*

In solving collective action problems across various domains—facing different kinds of citizen, agency, or institutional activity—there must be monitoring mechanisms and risk-reduction practices based upon appropriate control and organizational transparency (Micheletti 2003). All participants expect common knowledge of the exogenously-fixed structures of the situation and of payoffs to be received by all individuals under all combinations of strategies; and no external actor or central authority is present to enforce agreements among participants about their choices (Ostrom 1998).

### *Rationality*

Theorists using rational choice theory assume real uncertainty about the duration of a situation, or that some players are 'irrational' in their willingness to reciprocate cooperation with cooperation. Agencies often want to change the rules and bring about structural change when they observe that the

common-pool resources are being depleted. Boundedly-rational agencies expect other boundedly-rational elements to follow a diversity of heuristics, norms, and strategies, rather than adopt a single rational strategy (Simon 1957, Ostrom 1998).

### *Reciprocity*

There are families of strategies that can be expected in assessing the likelihood that others will cooperate; the basic norm in societies is that groups tend to react to positive or negative actions of others in-kind. There is strong evidence that reciprocity is a core norm of many individuals in collective action and social dilemma situations. Humans and organizations have a similar strong capacity to learn reciprocity norms and social rules that enhance the opportunities to gain benefits in coping with a multitude of social dilemmas. In general, researchers observe a "tit-for-tat" pattern where one party cooperates first, and another party does whatever the original party did in the first round (Axelrod 1984, Ostrom 1999).

### *Cooperation*

In any particular population, one is likely to find the following potential collective response norms when facing a repeated social dilemma: (1) always cooperate first, and stop cooperating if others do not reciprocate; punish non-cooperators if feasible; (2) cooperate immediately only if one judges others to

be trustworthy; stop cooperating if others do not reciprocate; punish non-cooperators if feasible, (3) once cooperation is established by others, cooperate oneself; stop cooperating if others do not reciprocate; punish non-cooperators if feasible; (4) never cooperate; (5) mimic (1) or (2), but stop cooperating if one can successfully free-ride on others; and (6) always cooperate—which is very rare in all cultures (Ostrom 1990, 280-285).

### *Communications*

Communications facilitate cooperation because they involve transferring information from those who can figure out an optimal strategy to those who do not fully understand what strategy would be optimal; it fosters mutual commitment and increased trust by adding additional value to the subjective payoff structure; and reinforces organizational values by developing group identity. Good communications allows individuals or organizations to increase their trust in the reliability of others (Smith 2010).

### *Culture*

Particular rules adopted by participants within the system or relationships under consideration vary significantly to reflect local circumstances, cultural ethos, and history. Cultural analyses must include an effort to understand how institutions, coalitions, and international agreements are vulnerable to corruption, manipulation, legislative irregularities, extortion, or nefarious

activity. Democracies are fragile institutions that are inherently subject to manipulation if citizens and officials are not vigilant. One of the most crucial factors in determining if it is possible that voluntary, rational pursuit of individual interests will result in group-oriented behavior is the size and culture of the group (Olson 1971).

### *Investments*

Research indicates that organizations temporarily caught in a social dilemma are more likely to invest resources to innovate and change the structure itself in order to improve joint outcomes or collective action. The explanatory link to solving collective action problems revolves around transaction costs (Ostrom 1990, 1992). The more community investments there are, the lower the costs of acquiring information, bargaining, monitoring, and enforcement; and people are more likely to communicate with each other about coordination problems that need to be resolved and, what to do (Wilson & McCay 1998).

### *Research*

There is a need for more qualitative and quantitative research supporting development of a reliable theory to explain why cooperation levels vary so much and why specific configurations (independent variables) of situational conditions increase or decrease cooperation (dependent variable) in first or

second level dilemmas. Also, one cannot assume that one type of institution exists for all social dilemmas (e.g. competitive markets, private industry, and government working groups). Most contemporary research questions that need to be addressed using models of organizational behavior relate to the effects of structural variables on the likelihood of organizing for successful modes of collective action (Ostrom 1990, Gilbert 2006).

### *Field Experience*

The ability to cooperate in collective action problems, such as those relating to the use of common pool resources or the provision of public goods, is a key determinant of economic and operational performance. Practical field experience has a significant impact on influencing institutions to encourage opportunistic behavior and promote cooperation, and helps shape the characteristics of individuals or agencies involved and the degree to which they cooperate. Practitioners tend to use reliable heuristics—rules of thumb—that have been learned over time and tend to give them good outcomes and consistent results in particular situations. Also, in frequently encountered, repetitive situations, individuals and agencies learn better methods that are tailored to particular situations (Ostrom 1990, 1999, Smith 2010).

### *Trust*

Trust plays a fundamental role in solving social dilemmas—where the experience of one agency with another impacts the first agency's choice—and action must be taken before the actions of others is known. In collective decisions, trust affects whether an agency or individual is willing to initiate cooperation with the expectation that it will be reciprocated. At the core of behavioral reason are links between trust, the investment others make in trustworthy relationships, and the probability that agencies will follow reciprocity norms. Trust, as a mutually-reinforcing principle, is impacted by structural variables as well as past experiences of participants (Rainey 1997, Scharpf 1997, 86).

### *Institutions*

There needs to be an examination of how different types of institutions support or undermine norms of reciprocity within hierarchies and among members of groups facing collective choices. Policies that provide alternative opportunities for institutions caught in dysfunctional networks are as important as those that stimulate positive networks and institutions (North 1990). Non-violent conflict resolution is a feature of successful institutions when arenas exist to process conflict cases constructively and to form new rules to cope with conflict more effectively (Yamagishi 1986).

### *Policy Implications*

If individuals or agencies are ineffective collective action contributors, then the state is an essential external authority that must resolve social dilemmas. And if agencies or individuals can draw from positive heuristics and norms to solve problems and create new structural arrangements to solve others, then the image of what a national government might do is very different. Collective action implies a considerable role for large-scale governments: national defense, monetary policy, foreign affairs, global trade, international diplomacy, economic stability, and strategic communications. In general, national governments are too small to govern global commons, and too big to handle small-scale policy problems (Hardin 1982, Searle 1990, Gilbert 2006).

In review, Table 3.1 provides a summary of the above 12 overlapping themes of collective action theory and interagency coordination, based on the body of literature—reinforcing the theoretical and operational groundwork for further analyses, research findings, and inferences in this study:

Table 3.1
*Intersection of Collective Action & Interagency Coordination*

| Collective Action Theory | Overlapping Themes | Interagency Coordination |
|---|---|---|
| Full disclosure of payoffs to be received by all individuals under all strategies, monitoring mechanisms needed (Ostrom 1998, Micheletti 2003) | **Transparency** | Agencies must expand coordination, close gaps, and increase transparency, policy changes needed to increase info sharing (NSMS 2005, NRC 2008) |
| Unless small group or coercion forcing group to act in common interest, rational, self-interested forces dominate (Simon 1957, Ostrom 1998) | **Rationality** | Expand whole-of-government connectivity among agencies at local, state, federal levels, to deal with complexity (GAO 2005, NRC 2008) |
| Expect a family of strategies where groups tend to react to positive or negative actions of others with a similar response (Axelrod 1984, Ostrom 1999) | **Reciprocity** | Agencies bring a range of factors that impact their decisions, especially the importance of efficacy and concern about the collective good (Olson 1965) |
| In any population, one is likely to find a range of potential collective responses when encountering a repeated social dilemma (Carney 1987, Ostrom 1999) | **Cooperation** | Within the interagency, all departments must cooperate fully to address threats and anticipate actions by nefarious elements (Donley 2005, NRC 2008) |
| Communications foster cooperation by transferring info, allow organizations to increase (or decrease) trust in others (Melucci 1996, Smith 2010) | **Communications** | Open lines of communications across agencies, close barriers on data controls, certification, classification concerns (GAO 2005, Frittelli 2008) |
| Rules adopted by participants within a system of relationships vary to reflect local circumstances, cultural ethos, and organizational history (Olson 1971) | **Culture** | Group members shape agency's willingness to contribute to the greater good based on cultural norms, and historical boundaries (Carney 1987) |
| Organizations caught in a social-dilemma will invest resources to improve joint outcomes or collective action (Singleton & Taylor 1992) | **Investments** | Collective action among agencies must leverage costs to implement policies, players can initiate action to improve systems (Gilbert 2006, Searle 1990) |
| Research is needed to develop a theory explaining why cooperation levels vary and certain actions increase or decrease cooperation (Gilbert 2006) | **Research** | Research is needed to clarify lines of responsibility within the maritime security community and operationalize policy (Brooks 1986, NSMS 2005) |
| Practical experience impacts agencies and institutions by encouraging behavior, and the degree to which they cooperate (Ostrom 1990, Smith 2010) | **Field Experience** | Agencies desire the benefits of collective action, while minimizing costs, using reliable heuristics based on previous experience (Hardin 1982) |
| In social dilemmas, trust affects an individual's willingness to cooperate, trust factors into the core of behavioral reason (Rainey 1997, Scharpf 1997) | **Trust** | Public-private partnerships are based on trust and directly impact collective action, and expectations of reciprocity (Searle 1990, Bratman 1993) |
| Institutions support or undermine reciprocity within hierarchies and among group members facing collective action challenges (North 1990) | **Institutions** | Interface among institutions involve constructive conflict resolution, formulation of rules to underwrite teamwork (Yamagishi 1986) |
| If agencies are ineffective collective action contributors, then the state must solve social dilemmas through policy measures (Searle 1990, Gilbert 2006) | **Policy Implications** | National policies are implemented across the interagency, but there is no central focal point for collaborative governance (Medina 2007, NRC 2008) |

## Relevant Theories & Models

By building on these overlapping themes and drawing upon other social science theories, one can expand the understanding of collective action and interagency coordination in the maritime security context, laying the comprehensive groundwork needed to conduct research and make observations. And consistent with an integrating, cross-governmental, multiple-lens approach, interagency policymakers might draw from models and frameworks such as Grounded Theory (Glaser & Strauss 1967), Stages Heuristic (Lester & Goggin 1998), Multiple Streams (Kingdon 1995), Social Construction (Ingram & Schneider 2005) , Social Network (Dowding 1995), Punctuated-Equilibrium (Baumgartner & Jones 1993), Advocacy Coalition Framework (Sabatier 2007, Jenkins-Smith 1990), Institutional Analysis & Development (Ostrom 2007), and Policy Diffusion (Berry & Berry 1990), among other theories to leverage the benefit of organizing and simplifying a complex area of study (Sabatier 2007, 293-319).

For example, consider markets failures, which are practical realities and provide the economic rationale for "public participation in private affairs" (Coase 1976)—clearly a factor when studying the essential variables of collective behavior and interagency coordination in the maritime domain. There is the potential for inefficient allocation of goods and services due to

variables such as information asymmetry, natural monopolies, transaction costs, or externalities—yielding a market condition which is not Pareto efficient (Arrow 1969, Weimer & Vining 2005). "These market failures," according to Teske (2004, 32) "are the main normative reason to regulate," offering the rationale for government intervention and improved interagency coordination. Additional examples for preemptive public action to regulate markets include: (1) regulatory consistency among firms, (2) jurisdictional negative externalities, (3) administrative support for analytic and oversight resources, and (4) national regulations are considered less susceptible to interest group pressures (Ibid, 23-25). This reminds us that when complexity and vulnerabilities are present in a public arena such as maritime security, the government often intervenes—potentially through interagency or collective action remedies.

The major works of Pigou (1912, 1920) further developed the concept of "externalities"—costs imposed or benefits conferred on others that are not taken into account by those taking the action. He highlighted the distinction between private and social marginal products, and the idea that government, via a mixture of taxes and subsidies, can mitigate such market failures—or "internalize the externalities." This "Pigou Effect," refers to the stimulation of output and employment caused by increased consumption as a result of

government action. Casting a shadow on public intervention, Coase (1960, 1988) challenged the assumption that government solutions are the optimum pathway to correct market failures, in the absence of transaction costs. He highlighted the need to further study methods used by government to address market failures. The "Coase Theorem" is an important basis for modern economic analyses of government regulation, especially in the case of complex public externalities (Becker 1978). Given the assertions of Pigou and Coase, this study carefully examines the appropriate role of the interagency intervention as an arm of the government, and seeks to address maritime "market failures" based on collective action mechanisms.

Moving from economics to the role of citizens or agencies, according to Denhardt & Denhardt (2003), the precepts of efficient public organizations and effective governance are grounded in democratic citizenship and "new public service," suggesting the importance of understanding government challenges—including the complexity of interagency coordination and collective choices—within the historical context. The strength of government, based upon the constitutional order established in 1776, "lies in the virtue and responsible involvement of citizens" (Caldwell 1976). What does that mean for the study of interagency coordination in the context of collective action theory and the maritime commons? If the United States is a maritime nation with a deep

history and economic dependence on maritime commerce, then one could argue that the attention of the American public, collective awareness of society, and congressional attention should be more focused on maritime security. This study asserts the need for increased national-level focus on policies and operations in support of maritime security resilience; and this study addresses potential multi-agency whole-of-government themes that may apply. The following section offers further historical support—from public affairs and public management historical literature—for the linkage of collective action and interagency factors within the public and private sectors.

In *The New State*, Mary Parker Follett (1918) urged a change in politics and the democratic social process where "the common will is gradually created by the civic activity of citizens." Her writings assert that the unity of the social process is advanced through group coordination, education, and collective choices within the local community, particularly through the instruments of community center organizations. Although the application of this concept may conflict with today's high-tech, increasingly complex and transient society, the principles are still relevant: public consensus, collective behavior, and responsible interagency cooperation can only take place through the integration of local, state, and national cooperation, starting at the grass-roots level (Downs 1967, Niskanen 1971).

Standing on the shoulders of Moe, Coase, and Simon, March & Olsen (1984) wrote *The New Institutionalism: Organizational Factors in Political Life*, which introduced new views about public sector inefficiencies by suggesting: (1) interdependence between relatively autonomous institutions, (2) complex micro-processes and historical inefficiencies, and (3) the importance of symbolic action to an understanding of politics. Institutionalism emphasizes the endogenous nature and social construction of political institutions. And they are not simply social contracts among self-seeking, calculating individual actors or organizations for contending social forces—they are collections of structures and rules that have an integrating role in political life (Ibid, 734-736), yet recognizing that public goods may often require interagency and collective actions to address macro-level needs for safety, security, and resilience in a fragmented policy environment such as the maritime domain.

As alluded to in the previous section regarding institutions, Douglass North (1990), in his influential book, *Institutions, Institutional Change, and Economic Performance*, addressed the differential performances of various economies through time, claiming that the major role of institutions—including within the government's interagency process—in society is to reduce uncertainty by organizing human interaction. North asks two primary questions: (1) How do institutions [or the interagency] evolve in response to

incentives, strategies, and choices, and (2) How do institutions [or the interagency] impact the performance of political and economic systems (Ibid, vi)? North stated that, "institutions are the rules of the game in a society or, more formally, the humanly-devised constraints that shape human interaction." He also examined the nature of institutions or agencies and their impact on economic performance, outlined the theory of institutional change, explained how past behaviors influence present and future behaviors, and studied the impact of incremental changes on the nature of path dependence. The role of institutions in shaping all aspects of public policy reveals the complexity and cross-scalar nature of governance systems (Tullock 1965)—further underscoring the potential utility of collective action as a catalyst for improved interagency coordination and resilience within the maritime security COI.

An enduring theme of public affairs is that public management "can make a difference in the success or failure of the implementation of public policy" (Sabatier & Mazmanian 1980, Lynn 2006). The need for improved policy execution and broader transformation in cross-governmental efforts point to the contributions of New Public Management (NPM) (Osborne & Gaebler 1992, Barzelay 2001, Kettl 2002). NPM emerged out of the privatization-of-government movement and focused on the role of public managers in

determining the success of government programs. Reinventing government offered best practices through which "public entrepreneurs" can bring about government reform through NPM (Osborne & Gaebler 1992). The NPM theme portends the potential benefit of transformation within the maritime community, which would yield expanded public-private partnerships and increased participation in security efforts by the commercial maritime industry—an interagency collective action challenge that will be addressed in this study.

NPM did not seek to privatize governmental functions, but rather to leverage the strengths of management practices found useful in the private sector, and thereby reduce the scope of government in favor of innovative market approaches and operational efficiencies. NPM also introduced a new lexicon in the public sector by framing public management as "governance" rather than "politics" or "bureaucracy" among other terms of reference (Frederickson 1996, Lynn 1998, 2006). While some authors claim NPM has peaked and is now in decline (Hughes 2003), others herald its potential going back to the National Performance Review during the Clinton Administration.

An alternative approach to NPM for reforming government is the New Public Service (NPS) model, which builds on democratic citizenship, community participation, and civil society (Denhardt & Denhardt 2000, 2003).

NPS contrasts with NPM by expanding the traditional role of public administrators, which Denhardts call the "Old Public Administration." Here, the role of public administrators is considered more complex, because they cannot simply act as managers in the business sense by performing cost-benefit analyses.

As Denhardts explain, "In NPS, the public administrator is not the lone arbiter of the public interest. Rather, the public administrator is seen as a key actor within a larger system of governance including citizens, groups, elected representatives, as well as other institutions." The role of government becomes one of assuring that the public interest predominates (Denhardt & Denhardt 2003, 81)—offering the premise for collective efforts within the interagency process. NPM and NPS both assume that free market forces will draw self-interested individuals into an equilibrium that affords maximum utility through collective action—the theoretical underpinning for this study, operationalized within the interagency process to improve national-level maritime security.

Knowing that complexity within governance can never be circumvented, today's public managers can simplify their environment by taking a systems approach to engage the policy process (Jervis 1997). After World War II, and into the 1960s, the public affairs field saw a shift in focus to public policy in

response to an expanding government workforce and a call for more effective management of public organizations (Allison 1971). Using tools from macroeconomics, policy analysts have conducted assessments and employed theories to establish the proper role of government vis-à-vis markets (Lindblom 1977, Ostrom 1990). And it has become increasingly apparent that political science and governance structures must be evaluated by more than simply effectiveness and efficiency criteria—there must be a values-based approach (Lasswell 1951, Fischer 1980).

Government—indeed interagency coordination and collective behavior—must also be measured by its ability to act strategically within complex policy networks, enable better access to information, correct for power imbalances and damaging social construction among stakeholders, as well as create "spheres of public discourse" (Ingram & Schneider 2005). Clearly, government's ability to remedy—through public policymaking efforts—systemic organizational problems and what American industry considers market failures have often fallen short (deLeon 1988, Smith & Larimer 2009), pointing to the imperatives in this study regarding the role of interagency coordination, and national-level maritime security policy in general.

The inadequacy of government policy solutions is unveiled when one considers the "staggering complexity of the policy process" and the challenge

faced by policymakers and analysts in attempting to simplify and understand the "goals and perceptions of hundreds of actors." The policy process includes subsystems and units of analysis such as key actors, time-spans (of a decade or more), programs at multiple levels of government, debates and disputes among stakeholders, and deeply held values (Sabatier 2007, Jenkins-Smith 1991, Baumgartner & Jones 1993, Ostrom 1983, 2002, Moe 1990). Notwithstanding the various views on what constitutes a model, theory, or framework, it is safe to say that one should take an inclusive approach and incorporate as many analytic tools as possible in public policy research, and employ multiple methods where possible, because different theories may have comparative advantages in various settings (Platt 1964, Loehle 1987, Shoemaker, Tankard, & Lasorsa 2005).

## Supporting Policy Frameworks

This section will expand on two supporting policy frameworks (Multiple Streams and Punctuated Equilibrium) that, although not employed directly in this research, suggest the utility of theoretical tools in the study of interagency cooperation, complexity in government, collective security, community resilience, and cross-scalar issues in the maritime commons. Further, given the lack of maritime-related data available to public policy researchers, these

theories also provide a useful reference point by helping understand the theory that informs this study—collective action.

The Multiple Streams (MS) framework offers a versatile planning approach because it introduces a perspective from which to evaluate policy development in the political environment by emphasizing "how policies are made by national governments under conditions of ambiguity" (Zahariadis 2007, p. 63). Drawing from the tenets of the garbage can model of organizational choice developed by Cohen, March and Olsen (1972), John Kingdon created the MS framework to describe the dynamics of governmental decision making and agenda setting. According to Kingdon (1995), three process streams flow through the active waters of the policy system: problems, policies, and politics.

The *problem* stream involves problem identification and recognition often based upon indicators or "focusing events;" the *policy* stream is populated by disparate policy communities that produce alternatives and proposals; and the *political* stream incorporates shifts in public opinion, administration changes, and interest groups in determining actor receptivity. These streams, all flowing independently and driven by differing forces, are joined by "policy entrepreneurs" at critical points to influence agenda setting and create policy alternatives (Kingdon 1995, Burgess 2002). A "policy window" will often open

in either the political stream or the problem stream and provide the opportunity for development of policy proposals and alternatives. By integrating the planning forces and variables across the policy—political—problem environment, "policy learning occurs, and policymakers gain a simplifying model to evaluate complex streams and gain a better understanding as the individual dynamics of each stream unfolds" (Kingdon 1995, May 1992). While there might be an absence of maritime-related research employing the MS framework, it offers a useful simplifying approach by evaluating collective choices against policy, politics, and problem variables; and helps identify "focusing events" in the maritime security area.

Punctuated Equilibrium (PE) theory was originally developed to help planners and researchers better understand complex policy dynamics in subsystems, but its use has been expanded to broader application in policymaking (True, Jones, & Baumgartner 2007, 172). This model was first presented in 1972 as an explanation for the differences in species: rather than changing slowly according to evolutionary models, development was explained as a near statis punctuated by large-scale events (Ibid, 180). The application to policy change was outlined by Baumgartner & Jones (1993), and has since been examined in many public policy-related contexts and gained increased utility across the field of public affairs. The theory states that policy generally

changes incrementally due to several restraints, namely lack of institutional change and bounded rationality of individual decision-makers (Givel 2006). Building on these findings, "policy change will be punctuated by changes in these conditions, especially change in party control of government or changes in public opinion. Thus, policy is characterized by long periods of stability, punctuated by large, but rare, changes due to major shifts in society or government" (Gersick 1991).

As with other approaches in this field, bounded rationality and incrementalism form the decision making foundation of PE theory (Lindblom 1959), however it is based on "serial processing of information and consequent attention shifts." While stability and change are important elements of the policy process, and most policy approaches appear to be best at explaining either of the two (stability or change), PE attempts to capture the dynamics of both realities in public policymaking (Leach & Sabatier 2005). While not employed directly the literature review or research, MS and PE served as supporting theories to help shape the study of interagency coordination prepare for conducting research. The next section of the dissertation will operationalize collective action principles, reinforced by the above theoretical themes through research questions and hypotheses that support the research design.

# CHAPTER 4

# RESEARCH DESIGN, DATA COLLECTION & ANALYSIS

## Overview

This study explores national-level imperatives and potential improvements of maritime security by building on the foundation of interagency coordination and the framework of collective action theory—uncovering the conditions under which interagency forces do or do not support maritime security. The research design draws from six maritime case studies that span a period of 11 years (1999 to 2010), and interviews of 35 subject matter experts from across the U.S. government interagency, senior policy officials, academic institutions, and commercial maritime industry. By integrating each part of the research plan—in an iterative and complementary manner—key themes emerge to test the hypotheses, and uncover shortfalls within the area of interagency coordination, and evaluate collective action as a theoretical framework. The study then identifies major findings and collective action remedies that will improve national-level maritime safety, security, and resilience. The following summary outlines the steps taken to ensure a coherent research process:

### *Collective Action Theory*

Collective action theory asserts that groups of individuals with common interests are more likely to act on behalf of their common interests—a framework shaped by several influential models, including cooperative behavior (Olsen 1965), common-pool resources (Schlager 2002), tragedy of the commons (Hardin 1968), logic of social dilemmas (Dawes 1980), and free riders (Olsen 1965, Hardin 1982). This theory informs the research questions used in the interviews, as well as the hypotheses, and helps uncover interagency themes and factors throughout the case studies and interviews. The subsequent chapters show how the research data, case study information, and interview outcomes relate back to the literature, with a clear connection to the concepts of collective action theory, and collective security in the global maritime commons.

### *Interagency Coordination*

The cross-governmental multi-agency collaboration—that drives the policy formulation and execution process at all levels of the U.S. government—is the focusing theme under examination because the hypotheses of this study assert that major improvements are possible by leveraging whole-of-government initiatives in the maritime security COI. The focus on an

interagency, whole-of-government approach (Page 2005, Kettl 2008) is a harbinger for other independent variables which emerged in this study and contribute directly to the dependent variable—maritime safety, security, and resilience.

### *Maritime Case Studies*

Explored through maritime cases, public documents, unclassified law enforcement reports, and expert interviews, this study employs a joint military, interagency government, and multinational lens to discover linkages between interagency coordination, collective behavior, and maritime security. Through six comparative case studies one gains a unique real-world perspective on operational factors and focusing themes within the policy process, public-private relations, and interagency challenges at the local, state, regional, tribal, and national level.

### *Expert Interviews*

Qualitative research information was collected from maritime and interagency experts, including officials at the Departments of Homeland Security, Justice, Defense; organizations such as the U.S. Navy, U.S. Coast Guard, Customs & Boarder Protection, and Defense Intelligence Agency; as well

as Maersk Line Shipping, Port of Los Angeles, and Africa Command in Stuttgart, Germany. They provided general policy information regarding interagency coordination themes and specific observations relative to the maritime case studies. Some interviewees could address both policy and case study questions, while some focused exclusively on elements of interagency coordination or collective behavior in government.

The interaction of the above elements enabled the operationalization of concepts into research questions, validated the suggested hypotheses, identified relevant linkages between collective action theory and interagency coordination, uncovered remedies to the most significant maritime security challenges, and evaluated the utility of the theoretical framework selected.

The case studies selected for this research involve commercial vessels which—for certain security or law enforcement reasons—were being monitored by elements of the intelligence community and involved the coordinated efforts of U.S. interagency government agencies in support of maritime transportation safety and security. These cases provide unique sources of "conceptual information to scope the boundaries under examination" (Goertz 2006, 180-183), within this study. Cases were selected for comparison across several key dimensions: (1) those occurring before and after promulgation of the National Strategy for Maritime Security (NSMS) in 2005;

(2) different types of operational protocols related to categories of vessel, cargo, crew, and company ownership; and (3) routine and non-routine incident classification, based on the level of complexity.

## Research Questions

The boundaries of this study were framed by these four fundamental research areas (collective action theory, interagency coordination, maritime case studies, and expert interviews), allowing one to distill a wide range of information and establish an information baseline of themes, expectations, and propositions. Appendix A represents a summary of this information, drawing from ten major maritime security themes; their associated imperatives and definitions at a strategic level; a proposed linkage to a primary element of collective action theory; and prospective operationalizing questions. This table helped forecast an initial linkage of themes across these four broad categories—providing a harbinger of factors that could emerge from the actual research findings.

Building upon the content of Appendix A, which was developed from general maritime security assumptions, collective action theory, cross-governmental interagency factors, and the most significant maritime security challenges, this study proceeded to the next phase employing the research

questions contained in Table 4.1. These questions provided the primary direction for this study and represent the expected themes this research is designed to uncover at the intersection of collective action theory and interagency coordination principles (Table 3.1). To that end, Appendix A suggested the explanatory variables (interagency themes), strategic imperatives, concept definitions, theoretical underpinnings (collective action), and operationalizing questions as a precursor for conducting expert interviews and maritime case studies—seeking answers to the research questions.

As an assessment tool to help operationalize collective action theory and formulate research questions, the information matrix (Appendix A) reflects an *initial* estimate of expected relationships between maritime security variables, interagency themes, and operationalizing questions based upon definitions, supporting references and precepts of collective action theory (i.e. "strategy implementation" linked to "transaction costs", and "intelligence cooperation" to "public goods"). The content and order of collective action themes in Appendix A were subject to change during the case studies because the objective was for the research findings (case studies, document reviews, expert interviews, etc.) to determine the actual variables, and uncover generalizable outcomes—resisting the temptation to pre-identify research outcomes.

Informed by this initial baseline of maritime factors—themes, expectations and propositions—from which collective action theory could be operationalized; the research questions (Table 4.1) pointed the study to the most significant qualitative findings. These questions relate directly to the maritime domain, government agencies within the maritime security COI, and maritime operations—designed to resolve specific collective action problems or interagency cooperation challenges.

Further, a major objective of this study—in answering the research questions—was to address the shortcomings of interagency coordination and maritime security policy by applying the precepts of collective action theory—examining the degree to which the expected maritime security and interagency themes comport with the threats to collective action (free-riding, tragedy of the commons, coordination, public goods, social dilemmas, transaction costs, focal points, externalities, etc.). To the extent maritime security and interagency coordination variables align with collective action themes, one can begin to understand the impact of these findings on the essential role of collective choices in maritime security policy execution. The cross-linking variables of Appendix A—informed by the research questions—support the study's construct validity and help identify the causal relationships needed to test the hypotheses in Table 4.2.

Table 4.1
*Research Questions*

| Number | Contents |
|---|---|
| Q1 | What are the most significant barriers to interagency coordination and collective action in supporting national-level maritime security? |
| Q2 | What practices or conditions represent successful or unsuccessful interagency coordination within maritime security operations? |
| Q3 | Drawing from collective action theory, what remedies are suggested to address the interagency coordination challenges identified? |
| Q4 | What collective action differences are observed in maritime cases after implementation of the National Strategy for Maritime Security? |
| Q5 | What attributes of non-routine maritime cases make them more or less difficult to accomplish collective interagency coordination? |
| Q6 | How is national-level maritime security policy developed and executed within the U.S. government interagency and operating agencies? |
| Q7 | What interagency mechanism is in place to leverage the benefit of international cooperation in supporting maritime security objectives? |

Table 4.1 (cont'd)

| | |
|---|---|
| Q8 | What causes government agencies and departments to interact the way they do in a maritime security collective action context? |
| Q9 | What role should the private sector—commercial maritime industry—play in supporting national-level maritime security policy execution? |
| Q10 | What barriers impede private sector participation in national-level maritime security efforts within the interagency? |
| Q11 | How might key elements of the interagency be incentivized to participate in expanded sharing of information? |
| Q12 | What role do intelligence products play in supporting multi-agency maritime security objectives? |
| Q13 | How would national-level maritime security be accomplished more (or less) effectively if a single coordinating authority was assigned within the interagency? |

## Research Hypotheses

The research hypotheses are based on the logic of collective action theory and interagency coordination principles in the maritime security context. Further, each hypothesis is linked directly to a specific collective action barrier

or interagency coordination variable, which will be further justified before explaining subsequent research findings. All these factors contribute to the internal validity of this research and examination of the dependent variable in the maritime commons: adequately secured maritime critical infrastructures leading to improved maritime security resilience.

All domains face various collective action problems—challenges in leveraging cooperation to optimize results—when the preferred move from a self-serving point of view yields inferior collective outcomes. These hypotheses reflect collective mechanisms for improved interagency cooperation, recognizing limitations in large-group dynamics, social dilemmas, and cross-scalar complexity (Ostrom 1990, Smith 2009).

There are numerous related frameworks within collective action theory and the literature urges caution because there is no single right way to model collective action—different frameworks offer different assumptions about each situation and lead to different conclusions (Ostrom 1990, Schlager 2002). The hypotheses focus on several levels of analysis within the common pool, public good resource area, starting with operational linkages where agency or institutional change is examined in the context of collective safety and security. Remedies are sought within a cross-governmental multi-agency environment where organizational rules dictate what actions are allowed, and what

information must be provided (Rainey 1997, Kettl 2004, 2006). To examine the logic of collective action and proposed linkages to interagency coordination in achieving improved maritime security, this study targets the ability of agencies to act with common interest, and overcome utilitarian, self-interested tendencies to serve broader group interests (Olson 1965, Olzak 1989). These assertions are tested with the following hypotheses: "Useful remedies to address maritime security threats are found within interagency—collective action linkages of the maritime domain" (H1); and, "Maritime security is a public good and can therefore be addressed through collective action measures to improve maritime security." (H2)

The maritime stakeholders in the interagency face their own version of "tragedy of the commons" if collective action barriers are not addressed with innovative solutions in the maritime domain. The consequences of inaction, or insufficient solutions, within the interagency could yield significant degradation in maritime safety and security with cascading impacts on domestic and global economies. The unique role of cross-governmental forces influencing economic conditions is based on the assertion of common pool resources, interdependency of maritime transportation systems within the broader global supply chain, as well as economic theory and common property research (Hardin 1968, Gordon 1954). The following hypotheses were designed

with those principles in mind: "Interagency coordination strengthens execution of maritime security policies and yields improved safety and security in the maritime commons" (H3); and "Collective action barriers are surmounted when maritime security policies are implemented by interagency cross-governmental elements (H4).

Within collective action theory, the prisoner's dilemma is a non-cooperative interaction where participants' attempt to incrementally process complex information and communication is impossible, forbidden, or uneven—not unlike the multi-agency policy environment in the maritime sector; and individually rational strategies often lead to collectively irrational or fragmented outcomes (Hardin 1968, 1971, Axelrod 1984). This social dilemma represents a fundamental problem in game theory that demonstrates why two people (or agencies) might not cooperate even if it is in both their best interest to do so, and underscores organizational challenges involved in coordination of any kind. This problem is amplified within the interagency if there is no focal point where authority is assigned. If coordination is hindered by lack of ownership, and coordination is needed to overcome collective action barriers, it is essential that clear lines of responsibility be established. Collaborative governance and collective behavior with assigned rules help resolve the conflict between individual interests and achievement of shared equities for a group of

agencies (Medina 2007, Donahue & Zeckhauser 2006). To test these arguments, the following hypotheses were formulated: "National-level maritime policies are implemented in a fragmented manner, resulting in a proliferation of uncoordinated maritime initiatives (H5); and "The absence of a single authority—responsible for maritime security governance—contributes to the lack of interagency coordination in the maritime commons (H6).

Routine and non-routine activity in the context of maritime case studies hinges upon the sufficiency of existing policies and procedures (routine), and need to establish new protocols or operational practices (non-routine). A complementary study—found within rational choice theory—uses a narrow definition of "rationality" simply to mean that an individual acts *as if* balancing costs against benefits to arrive at an action to maximize personal advantage, or follows the optimum path. Although models used in rational choice theory are diverse, all assume individuals choose the best action according to unchanging and stable preference (routine) functions and constraints facing them (Felson 1994, Schlager 2002, Givel 2006). In a post-September 11 security environment—more than ever—the calculation regarding best practices within the maritime community and calculations of routine/non-routine variables, depend heavily upon the presence of international factors. Global collective action involves principles of international collaboration—factors that can

ultimately impact collective security in the Homeland. Several researchers have suggested operationalizing these concepts through a global maritime information exchange system (Haas 1980, Sandler 2004, NRC 2008). Testing the following hypotheses enables examination of these issues: "Interagency coordination is easier to accomplish for routine maritime security cases, and is more difficult for non-routine cases (H7); and "Given the current maritime threat environment and interconnected nature of the global supply chain, there is an insufficient level of collaboration with international partners" (H8).

Another research concern of this study is the effectiveness of cross-governmental information-sharing and the contributing role of the private sector in advancing the strength of maritime security resilience. Too often, closed silos of information exist within government systems—isolated by policies, regulations, or culture—precluding the movement of critical information across agency boundaries (Melucci 1996, NRC 2008). Collective security and interagency coordination in the interconnected global supply system requires more transparency and information-sharing across organizational seams of government, industry, and academia (Relyea 2004, GAO 2005, 2006, Frittelli 2008). A primary example of information-sharing challenges is the interagency's relationship with the commercial maritime industry. While the merchant seamen are the practitioners in the maritime

commons, and have the necessary information and experience to advance maritime security, they are often absent from the national policy picture. Some literature points to the lack of incentives for the private sector to participate while other sources consider government obstacles the culprit. Others argue that if maritime security is a public good being provided by the government, the private sector is essentially free-riding—enjoying the benefits of a secure environment to transport maritime commerce and make financial gain—on the backs of public sector policies and security provisions (Olson 1965, Ostrom 1990, Bratman 1993). By testing the following hypotheses, this study will spotlight this issue: "Lack of information-sharing across organizational seams of government, industry, and academia increases maritime security risks (H9); and, "Limited participation by the commercial maritime industry weakens the content and impedes implementation of maritime policies" (H10).

From Pearl Harbor to the terrorist attacks of September 11$^{th}$, intelligence collection, analyses, sharing, and subsequent signals and warnings are often considered the missing keystone in the bridge of national security (Wohlstetter 1962, USG 2004). Despite the formation of new intelligence organizations to better coordinate collection, analyses, and dissemination of products, intelligence data remains an area of concern within the maritime domain (NSCT 2006, NSMS 2005). The literature reminds us that public goods (like

maritime intelligence) are hard—or even impossible—to produce in the private sector, because the market fails to account for significant positive externalities. Common pool resources—in this case intelligence and it's corresponding role in national security—are non-excludable and non-rivalrous public services; "where consumption of goods or services by one member does not reduce the availability for others, and no one can be excluded from using the services" (Samuelson 1954, Ostrom 1990, Donley 2005).

Other structural features of the interagency—such as organizational culture and programmatic budgets—are targeted as prominent reasons for lack of coordination or sharing of resources. Recognizing that individuals and agencies will not always act voluntarily to achieve the common interest, external coercion or incentives are often needed to compel action on the part of players and overcome cross-governmental hurdles (Ostrom 1990, Denison & Mishra 1995). This study examines the role of intelligence, cultures and budgets by testing the final hypotheses: "Vulnerabilities in the maritime domain are created or amplified by failures to collect, analyze, or share intelligence information within the interagency" (H11); and, "Existing cultural or budgetary systems often impede interagency coordination and collective behavior efforts across government organizations when addressing maritime issues" (H12). Table 4.2 summarizes the 12 hypotheses being tested against

collective action and interagency coordination variables in the maritime security context.

Table 4.2
*Hypotheses*

| Number | Contents |
|---|---|
| H1 | Useful remedies to address maritime security threats are found within interagency—collective action linkages of the maritime domain. |
| H2: | Maritime security is a public good and can therefore be addressed through collective action measures to improve maritime security. |
| H3: | Interagency coordination strengthens execution of maritime security policies and yields improved safety and security in the maritime commons. |
| H4: | Collective action barriers are surmounted when maritime security policies are implemented by interagency cross-governmental organizations. |
| H5: | National-level maritime policies are implemented in a fragmented manner, resulting in a proliferation of uncoordinated maritime initiatives. |
| H6: | The absence of a single authority—responsible for maritime security governance—contributes to the lack of interagency coordination in the maritime commons. |
| H7: | Interagency coordination is easier to accomplish for routine maritime security cases, and more difficult for non-routine cases. |

Table 4.2 (cont'd)

| | |
|---|---|
| H8: | Given the current maritime threat environment and interconnected nature of the global supply chain, there is an insufficient level of collaboration with international partners. |
| H9: | Lack of information-sharing across organizational seams of government, industry, and academia increases maritime security risks. |
| H10 | Limited participation by the commercial maritime industry weakens the content and impedes implementation of maritime policies. |
| H11 | Vulnerabilities in the maritime domain are created or amplified by failures to collect, analyze, or share intelligence information within the interagency. |
| H12 | Existing cultural or budgetary systems often impede interagency coordination and collective behavior across government organizations when addressing maritime issues. |

## Data Collection and Analysis

Employing a comparative case study design (Yin 2009), this study examines cases that uncover maritime security challenges and collective action barriers within the context of interagency coordination. This approach reveals causal pathways between maritime policy and the challenges across the maritime domain, and potentially leads to additional hypotheses, beyond the ones identified. This research design conforms to a spatial comparison research design because in this setting it is possible for researchers to observe variations among groups, and measure the outcomes of interventions that occurred at some point in the past (Rohlfing 2004, Gerring 2007).

This is a multiple-case study involving crucial cases and a "most-similar" case approach because they differ in outcomes, but have similar explanatory factors—congruent in all respects except the variables of theoretical interest (Gerring 2007, 30-36). The advantage of a multiple-case design is that increased sources of data strengthen the validity of the research and expand the analytic benefit (Yin, 2009). Further, these maritime cases support future generalization—representative of a broader population of cases—and offer several "most-likely" cases because they are considered predictors of future outcomes (Gerring 2007, George & Bennett 2005).

The maritime cases selected involve a combination of law enforcement events, or suspicious associations with terrorist networks relating to vessel ownership, itinerary, nature of the cargo, and its U.S. destination; and highlight the challenges of detecting suspicious cargo, monitoring transnational criminal activity, tracking movements of foreign crewmen, and identifying contradictory reporting data. These cases—individually and together—offer a degree of parsimonious examination needed to study maritime security requirements and opportunities within the cross-governmental interagency context. Although all the cases involve maritime transportation and security, each one uncovers different causal factors relative to collective action theory, and contributes to answering the fundamental research questions linked to the examination of interagency coordination factors and maritime security resilience.

In a case study,[6] analysis consists of making a detailed description of the case and its setting (Creswell, 2007, p. 163). This study uncovers the descriptive reasons for the shortfalls in cross-governmental, interagency efforts to support maritime security policy, and offers recommendations, as well as possible areas of future research informed by collective action theory. Guided by the

[6] According to Yin (2009, p 18), a case study is "an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used "

principles of collective action, and drawing from interviews with subject matter experts, as well as relevant case studies, this research identifies the most significant factors contributing to, or detracting from, interagency coordination in support of maritime security.

The range and complexity of issues surrounding maritime security policy and interagency coordination requires collecting information "using a variety of sources and methods," appropriating the benefits of triangulation strategies (Fielding & Fielding, 1986). This study draws empirical data from multiple sources: documentation, archival records, expert interviews, and participant observation. Collection of this evidence requires different skills from the researcher, and while not all sources are available in every case study, it is clear that multiple sources of data contribute to the improved reliability of the study. No single source has a complete advantage over the others; rather, they might be complementary and could be used in tandem (Yin 1994, Stake 1995). Appendix B indicates the strengths and weaknesses of each type of evidence.

Data collection efforts are strengthened by open-ended questions to take advantage of triangulation—application of multiple sources of evidence—developing converging and reinforcing lines of inquiry to allow corroboration of findings from case studies, interviews, and historical documents. This approach recognized the unique maritime security and interagency policy

experiences of each interviewee in elevating the confidence level and credibility of the empirical data, and establishing rapport with them as subject matter experts. Triangulation also reduced risk by mitigating systematic biases and limitations of a specific source or method, offering a broader understanding of the issues being investigated (Maxwell 2005, 93-94, Yin 2009).

Building on the multiple-case, holistic study design with case studies, this study sampled 35 members of the maritime security community of interest through interviews—to operationalize critical variables from the list of interagency and collective action themes. The interview instrument was designed based on research questions and hypotheses that were informed by collective action principles. The interviewees' experience in the maritime field was considered, as well as the nature of their past/current position(s), frequency of interaction with interagency policymakers, and specific familiarity with the selected maritime security cases. There was a robust pool of experts available from maritime security organizations, the commercial maritime industry, and government interagency departments anxious to engage on maritime security issues, interagency coordination, and collective behavior across government organizations.

Since there are numerous rival explanations (political influence, security training, maritime doctrine, congressional mandates, etc.) that could impact the observed outcomes, additional questions were included in the interview instrument to control for these variables. The analysis methods initially focused on the questions that operationalize collective action theory, drawing directly from the research questions. Using charts (similar to Appendix A) to describe the research findings, data are summarized in graphic form to synthesize information more clearly. Significant trends and inferences were identified and documented to help uncover expected (and unexpected) themes related to the research questions and hypotheses.

This data collection and analysis plan relied heavily upon access to credible interviewees from across the interagency maritime community of interest, as well as reliable sources of non-classified law enforcement case files, open-source public documents, and references from the commercial maritime industry, as well as policy organizations and operating agencies within the public sector. Because the central point of analysis for this research is national-level interagency coordination, the primary sources of subject matter experts interviewed were the planning and operational staffs of government agencies and departments; representatives of the commercial maritime industry; and members from academia (Figure 5.7 and Appendix C).

# CHAPTER 5

# MAJOR INFERENCES FROM RESEARCH

## Maritime Case Studies

This study uncovers the most significant interagency coordination challenges in conducting maritime security operations, and offers potential collective action remedies to address those issues. This will be accomplished by examining a selection of crucial case studies and interviewing maritime experts who are experienced in various levels of maritime security policy execution, including some having personal experience with the selected cases. The six cases utilized are prescient because the national maritime security community of interest and cross-governmental agencies participated in the resolution of these cases—drawing significant interagency, military, law enforcement, industry, and public attention because they revealed security vulnerabilities across multiple segments of the U.S. infrastructure and maritime transportation system.

The following case studies provide real-world maritime transportation safety and security examples, allowing for evaluation of cases that: (1) occurred before *and* after promulgation of the NSMS in 2005; (2) reflect a general

classification of routine *and* non-routine interdiction cases based on maritime security historical trends and law enforcement protocols; and (3) a wide variety of operational missions, geographic locations, enforcement authorities, statutory jurisdictions, and interagency coordination challenges:

Table 5.1
*Maritime Case Studies Summary*

| **Vessel Name** | **Nature of maritime case** |
|---|---|
| GISSAR (1999, NR) | Fisheries enforcement conflict with Russian long liner along the international boundary of Alaska's Bearing Sea |
| LINA MARIA (2004, R) | Transnational drug smuggling in the Eastern Pacific transit zone; largest drug seizure to date, conducted by USN/USCG team |
| WARM SEAS VOYAGER (2005, R) | Intelligence reports indicated possible nexus to foreign terrorist organizations; cargo and vessel itinerary increased suspicion |
| MAERSK ALABAMA (2009, NR) | Somali piracy off the Horn of Africa with U.S. special forces response when the American captain was captured, three pirates killed |
| SUN SEA (2010, NR) | Human smuggling of Sri Lankan refugees requiring joint interdiction with Canada; suspected ties to terrorist organization (Tamil Tigers) |
| TORTUGA (2010, R) | Trans-Atlantic narcotics-smuggling with joint, interagency, multinational response off Cape Verde; foreign crew on a U.S. sailing vessel |
| **Routine (R)—followed established MLE interagency protocols and procedures** | **Non-Routine (NR)—high level of complexity, required new MLE policies or engagements** |

In order to effectively extract relevant information from these cases and identify the most salient findings, the following sections provide: (1) background with an operational summary of each of the six maritime case studies; (2) an explanation why each case was selected for research; (3) the

substantive themes that emerge from each case that are linked to interagency coordination; (4) useful references regarding these cases from interviews with 35 maritime experts and policy makers; and (5) an analysis reflecting linkage of these cases and interagency themes to collective action theory.

## Case Study Profiles, pre-NSMS

Table 5.2
*Case Studies, Pre-NSMS*

| Case Study | Nationality Flag State | Last Port of Call (LPOC) | Next Port of Call (NPOC) | Nature of Cargo | Threat Reporting | Data Sources |
|---|---|---|---|---|---|---|
| **F/V Gissar (GIS), 1999 Non-Routine** | Russian flag, crew of 74 Russians | Russia | Russia | Fishing, 100-meter trawler, gray hull, white superstructure | Russian F/Vs surrounded CG vessel, threatened to ram | Interviews, interagency reports, open source documents |
| **F/V Lina Maria (LM), 2004 Routine** | Cambodia, Declared Stateless, 10 Colombian crew | Colombia | Northbound, intercepted 300 nm SW of Galapagos Islands | Over 30,000 lbs of cocaine | Intelligence reports indicated suspicious cargo | Interviews, reports, open source documents |
| **M/V Warm Seas Voyager (WSV), 2005 Routine** | Republic of Marshall Islands, Crew of mixed nationality | Constanta, Romania in the Black Sea | Wilmington, North Carolina | Liquid urea (fertilizer), converted fuel to chemical cargo carriage | Owner & crew w/possible terrorist associations, safety & security | Interviews, interagency reports, open source documents |

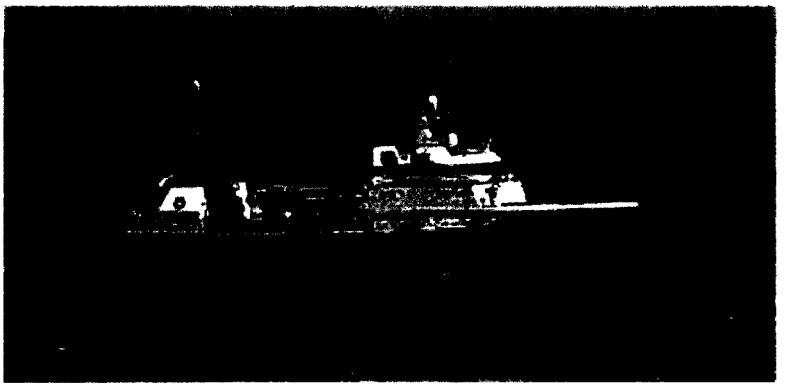

*Figure 5.1* F/V GISSAR (1999)

BACKGROUND: The Russian Fishing Vessel (F/V) GISSAR was intercepted by the Coast Guard (CG) in August, 1999 while fishing in the 200-mile U.S. Exclusive Economic Zone (EEZ) on the American side of the U.S.-Russian maritime boundary in the Bering Sea off the coast of Alaska (272 miles west of St. Paul island), and a CG cutter pursued GISSAR back into Russian waters and conducted a law enforcement boarding. To complicate matters, a Russian Boarder Service vessel arrived on scene and sent a Russian boarding party to the GISSAR, informing CG officials that they (the Russians) had taken appropriate enforcement actions against GISSAR for violation of the fisheries "buffer zone" established in the Bering Sea. In order to deter fishermen from trespassing into American waters, the Russian government had introduced a

five-mile buffer zone, and then reduced it to 1.5 miles as the fisheries stock were reduced (DHS/USCG 1999, Interview ID: 003, Interview ID: 016).

After a two-day standoff, the CG received interagency approval to seize GISSAR and prosecute it for fisheries violations. GISSAR then appeared to disable itself mechanically to prevent its seizure, and concurrently, many other Russian F/Vs (up to 19 vessels observed) moved into the area attempting to impede the actions of the CG vessel. After the CG boarding team was removed due to safety concerns, another Russian F/V began towing GISSAR toward the Russian coastline. The U.S. State Department approached Russian diplomats regarding the Russian incursion into the U.S. EEZ and requested their support in prosecuting GISSAR and addressing the actions of the other F/Vs in the vicinity. Control of GISSAR and evidence of the violations committed were transferred to the Russian Border Guard vessel Antius (DHS/USCG 1999, Interview ID: 003, Interview ID: 016).

Although GISSAR's captain denied fishing inside the U.S. EEZ, records on the Russian trawler and observations by the CG indicated a boundary violation. Under the Law of the Sea Treaty, a nation is authorized to pursue a foreign vessel which intrudes upon its territorial waters, but GISSAR was denying the incursion. U.S. officials continued to press Russian authorities through diplomatic channels to prosecute GISSAR and the other Russian F/Vs involved

in this incident. Over the years, U.S. fisheries officials indicate that clashes of this nature occur as poaching and over-fishing on the Russian side of the boundary line drastically reduce the available catch (DHS/USCG 1999, Interview ID: 003, Interview ID: 016).

INTERAGENCY THEMES: Although the Cold War was officially over when the GISSAR case occurred (in 1999), there are, and continue be, occasional reminders of the old-Soviet conflict in far-away places like the fishing grounds of the Alaskan Bering Sea, where Russian factory ships press—or in some cases cross—the international fishing boundary. In this case, there was a tactical showdown at sea, between a Coast Guard cutter conducting a fisheries enforcement patrol to monitor Living Marine Resources (LMR) and a Russian stern trawler catching tons of pollock that triggered interagency and diplomatic activity from Alaska to Washington, DC and Moscow. This case highlights the state of international communications, enforcement of the 1990 U.S.-Russian Agreement for fishing boundaries in the Bering Sea, and challenges of the Exclusive Economic Zone (EEZ) in the maritime commons. More specifically, the following elements of the case point to the potential role of interagency coordination:

(1) *All department and agencies with relevant maritime equities must be engaged throughout the process*. Cross-departmental communications between the U.S. Coast Guard and Department of State were established early and maintained throughout the event, ensuring that Washington and Moscow were notified and involved appropriately; however, there is no indication of direct participation by the National Marine Fisheries Service (NMFS) within the Department of Commerce—reducing the full advantage of interagency influence by leveraging another U.S. law enforcement agency with relevant enforcement authority and existing relationships with their Russian counterparts.

(2) *Law enforcement capabilities can be significantly enhanced by the application of systems and technology*. Application of technology likely handicapped the ability to challenge the Russians' assertion that they had not crossed the fisheries boundary. When the Coast Guard cutter reported the GISSAR's incursion into the U.S. EEZ, it reported the geographic position information based on helicopter observations, which were subject to challenge by the Russian trawler. Although the GISSAR had not recorded any ship positions during the time in question, U.S. law enforcement agencies needed a more reliable surveillance monitoring and position-verification system than

"observations from a helicopter." Consequently the Russian Border Service and the U.S. government were essentially taking one side's argument against the other rather than empirical positioning data with multiple sources of electronic validation.

(3) *Effective interagency coordination at the national-level will often enhance the safety and success of field operations.* Interagency coordination in Washington, D.C. between the Departments of Transportation, Justice, and State was timely and effective, allowing the on-scene commander (U.S. Coast Guard) to avoid a more dangerous international incident. At one point, the Coast Guard cutter took the GISSAR under tow and proceeded to seize the vessel for a fisheries violation, prompting a threatening reaction from a fleet of Russian fishing vessels operating in the vicinity—seeking to prevent the Coast Guard's enforcement action against the GISSAR. Acting quickly to ensure the safety of the boarding party (still on board the GISSAR at the time) and avoid further hostility, interagency representatives at the headquarters-level acted in a way that helped de-escalate conditions at the tactical level and allow diplomats to adjudicate the matter between respective embassies.

COLLECTIVE ACTION THEMES: Many interagency lessons were learned from this case because it raised significant concerns within the USG in general, and Departments of State, Commerce, and Transportation[7] in particular, due to safety and security concerns when the Russian fishing vessels began to threaten the Coast Guard cutter on scene. And since this incident occurred in 1999—six years before establishment of the interagency MOTR conference call process—formal coordinating mechanisms for managing an operational crisis of this complexity were lacking. Collective action offers a range of factors that affect decisions, especially the importance of efficacy and concern about the collective good (Olson 1965). In this case, the *tragedy of the commons*, as a collective action theme suggests "collective behavior" was needed to support international cooperation and preserve limited fisheries stock in the waters between Alaska and Russia. And there is collective benefit in sharing information and identifying factors that promote or inhibit cooperation at the local regional level (Sandler 2004).

Further, *conformity costs*—used to influence collective behavior and improve enforcement—were needed within the international fishing fleet to preclude over-fishing or violation of international fishing boundaries. According to collective action theory, there is often a need to impose costs on

[7] The U.S. Coast Guard was organizationally under DOT at the time of the GISSAR case.

groups (also known as "appropriators") to achieve collective goals despite opposition from some actors. *Conformity costs are imposed when the* collective decision differs from that of an individual's ideal preference; so negotiating agreeable courses of action will require tradeoffs among parties—in this case two governments—that must continually "weigh what costs its citizens are prepared to bear" (Ostrom 1990).

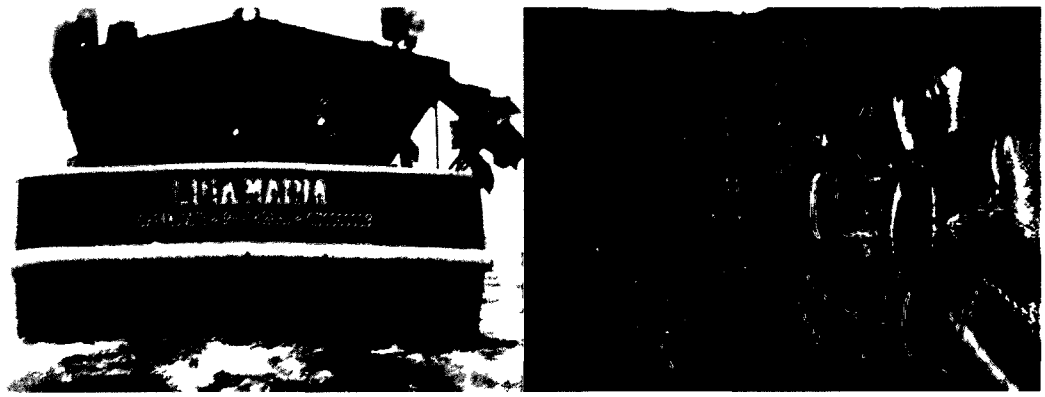

*Figure 5.2* F/V LINA MARIA (2004)

BACKGROUND: In September, 2004 Coast Guard and Navy forces discovered more than 30,000 pounds (600 bales) of cocaine—the largest single cocaine seizure to date—aboard the "stateless" F/V LINA MARIA approximately 300 miles southwest of the Galapagos Islands in the Pacific Ocean. This seizure was the result of extensive interagency coordination by Joint Interagency Task Force-South (JIATF-S), Drug Enforcement Agency (DEA), Federal Bureau of Investigations (FBI), U.S. Immigration and Customs Enforcement (ICE), U.S. Customs and Border Patrol (CBP), Departments of Justice, State and Homeland Security, and the Organized Crime Drug Enforcement Task Force Investigation in southern Florida, as well as international cooperation from the governments of Cambodia and Belize. A Navy ship intercepted LINA MARIA and conducted a law enforcement

boarding with an embarked Coast Guard Law Enforcement Detachment (LEDET). The team discovered bales hidden in a sealed ballast tank and took the ten crewmembers into custody. The U.S. Attorney indicted the crewmembers of LINA MARIA in Tampa, Florida for their role in contraband smuggling (DHS/USCG 2004, Interview ID: 003).

This successful maritime drug interdiction required robust interagency collaboration across a diverse collection of government players to accomplish: intelligence collection and dissemination; detection and monitoring of the vessel's movements; interdiction and apprehension once the vessel was intercepted; and prosecution and investigation within the civil courts. Intelligence analysts provided information to detection and monitoring forces that in turn delivered time-critical actionable intelligence to operational interdiction and apprehension assets. The post-seizure investigation and information collected from the suspect vessel and crewmember interviews completed the interdiction cycle by generating additional insights into drug smuggling trends, which allowed interagency law enforcement authorities to more effectively employ scarce surveillance resources such as vessels and maritime patrol aircraft (DHS/USCG 2004, Interview ID: 003).

INTERAGENCY THEMES: The city of Buenaventura, Colombia (located on the west coast of Colombia) combines the richness of Colombia's culture and landscape with the plague of drug trafficking. The city's port and surrounding river systems provide access to the Pacific and ultimately cocaine markets to the north, and is also a reception point for laundered money and arms that flow south from the U.S. and Central America. Since the mid-1990's, law enforcement reports increasingly pointed to this location as a node of operations for Colombian cartels to smuggle large shipments of illegal narcotics to northern drug markets (Logan 2006). The LINA MARIA case was a significant indication that the Eastern Pacific and places like Buenaventura were becoming smuggling hot spots, emphasizing the role of interagency coordination in the maritime commons:

(1) *Formal structures with standardized procedures—along with personal networks—are needed to ensure reliable interagency coordination.* Cross-governmental information sharing for this major counterdrug case depended heavily upon personal networking rather than formal organizational mechanisms to connect elements of the interagency with counterdrug equities: Coast Guard, Navy, DEA, FBI, and JIATF-South. With the support of the State

Department, and governments of Colombia and Belize, the vessel was declared "stateless" and the interdiction proceeded in a timely fashion; however, this case pointed to the need for a policy that would formally establish an interagency mechanism to coordinate among multi-agency departments and offices—linked to (permanent) designated positions rather than certain individuals, currently (and temporarily) assigned to that agency.

(2) *The post 9-11 threat environment—more than ever—requires active engagement and coordination with an internationalized approach.* International cooperation was channeled through appropriate diplomatic channels (Department of State), and led to the proper handling of authorities, jurisdictions, and law enforcement action, including evidence collection, handling of detainees during and after the case, unity of effort between Navy and Coast Guard operational assets at sea, post-seizure analysis to exploit lessons learned, and prosecution of the case within the U.S. court system. The case further underscores the importance of international collaboration across all domains and among all communities (air, land, sea, cyber, intelligence, etc.) because no single country can account for the complex number of variables associated with the vessel, crewmembers, cargo, finances, and documentation.

In this case, the vessel departed South America, had a Colombian crew, and was originally registered in Cambodia.

(3) *Multiple and reinforcing sources of reliable intelligence allows more efficient use of scarce resources and increases the probability of detection.* Intelligence planning and coordination was crucial to the successful prosecution of the LINA MARIA case—including collection, analysis, dissemination, and post-seizure sensitive site exploitation. Reports that surfaced after this case pointed to robust interagency intelligence sharing and collaboration that allowed DOD/DHS/DOJ/USN/USCG/CBP/DEA assets to search effectively and ultimately intercept the suspect vessel after wide-area ocean surveillance by interagency detection and monitoring assets: maritime patrol aircraft, USN/USCG offshore patrol vessels, and employment of strategic monitoring capabilities, which resulted in the interdiction and apprehension of the largest drug seizure to date (2004).

COLLECTIVE ACTION THEMES: When agencies follow similar collective action patterns as individuals (with self-interested, utilitarian motives) the demands of maritime security can only be met if handled as a public good—enlisting the coordinated contribution of all relevant agencies (counterdrug in

this case) to achieve objectives. One of the interagency flashpoints in this case centered around budgetary issues—as is often the case with federal agencies—because once an agency (DOD/SOUTHCOM, DHS/USCG, DOJ/DEA, or DOS) is designated the "lead federal agency" they are usually left "holding the bill" for prosecution of the case, and the associated expenses that accompany a major drug seizure.

According to the *tragedy of the commons*, public goods exist and will be destroyed or sub-optimized if exploitation is not controlled through external intervention or coercion, and therefore, some action must be taken to align personal gain with the group good. When individuals or agencies take independent, self-interested action, they increase collective costs and cause inefficiencies; and when the common resource is lost, all members experience the adverse impact because some player(s) tried to maximize their singular interests at the expense of the greater good (Hardin 1968, Sandler 2004).

So in this case, collective action among public organizations suggests sharing of *transaction costs* associated with implementing policy (Gilbert 2006), including operational expenses to search for the suspect vessel, travel expenses to fly USG special agents into the region, and post-seizure handling of detainees as well as processing the contraband itself. These costs—according to the literature—are often divided into subcategories (search, negotiation,

monitoring, and enforcement) to allow for equitable distribution and collective cost-sharing (Weible 2008).

Another application of *collective action* theory in this case was the major success of information-sharing among interagency members of the intelligence community. They were able to optimize intelligence collaboration and dissemination to improve notification and warning indicators as well as detection and monitoring effectiveness (Betts 1978, Hughes-Wilson 1999, Donley 2005), and the results were an historic counternarcotics seizure. Based upon lessons learned from this case, the interagency can expand organizational capabilities and willingness to move information across security classification levels, reduce over-classification, and maximize the flow of information among interagency stakeholders (Davis 1952, Kaiser 1989, Hubbard 2005), because success is a catalyst for further success when building interagency relationships and improved information sharing.

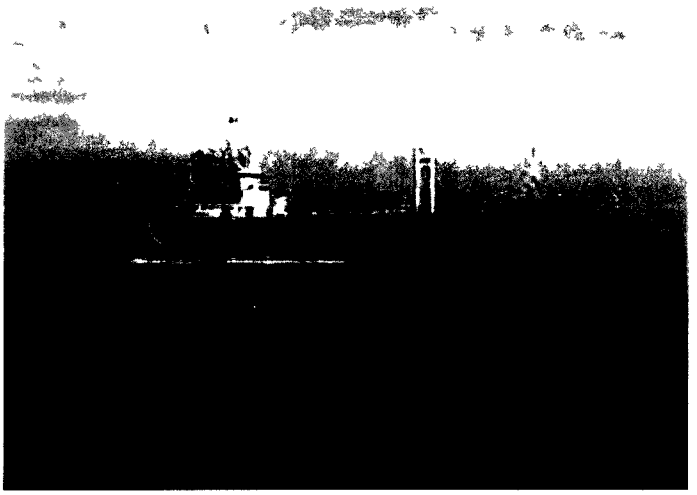

*Figure 5.3* M/V WARM SEAS VOYAGER (2005)

BACKGROUND: In late April 2005, the tank vessel WARM SEAS VOYAGER (WSV), flagged in the Republic of Marshall Islands (RMI), was bound from Romania to Wilmington, North Carolina. At the time of the case, the U.S. had recently concluded negotiations with RMI—which operates one of the largest open ship registries in the world—under the Proliferation Security Initiative (PSI). While the vessel was in transit, the national intelligence community reported several potential linkages between the vessel's owners, a certain crewmember, and terrorist organizations. There were additional concerns associated with the vessel including it: (1) had not been to the U.S. since 1990; (2) normally operated in the Middle East; (3) had recently converted

from fuel to chemical carriage; (4) was reported to be carrying liquid urea (fertilizer); and (5) was owned by a company with business connections that raised suspicions within the law enforcement and counterterrorism communities (DHS/USCG 2005, Interview ID: 003).

Based on this information, several agencies were concerned that the vessel presented a potential safety and security threat to the U.S. and senior leadership in several government agencies urged rapid action to mitigate risks to the U.S. as far from American shores as possible. Other agencies wanted to avoid unnecessary interference with legitimate commercial shipping interests, while other agencies were concerned that at-sea operations might adversely impact ongoing international negotiations such as PSI, and maritime counterterrorism agreements at the International Maritime Organization (IMO). Several government departments expressed concern about prematurely acting—exposing investigative interests—by conducting a boarding of the vessel far from U.S. shores, rather than following standard arrival protocols. In short, interagency authorities had differing views on the best sequence for initial action as well as the lines of authority in responding to this suspected maritime threat (DHS/USCG 2005, Interview ID: 003).

Further, given the uncertainties surrounding information available and level of threat, several government agencies agreed to convene an interagency

conference call—a precursor to the Maritime Operational Threat Response (MOTR) process—to coordinate the U.S. interagency response to this potential maritime threat, including the national intelligence community, Departments of Defense, Justice, Homeland Security, and State.

The U.S. Government, with flag-state consent, conducted a boarding some 900 miles east of Wilmington, North Carolina to perform a preliminary inspection and secure the vessel prior to arrival of a complete interagency inspection team, which inspected the cargo, collected and evaluated crew identification, interviewed the crew, and scanned the vessel for radiation before the vessel approached the U.S. coastline. After an interagency determination was made that it was safe to allow the vessel to enter port, the WSV was escorted into Wilmington. The RMI expressed satisfaction with the process, and later supported the U.S. at the IMO in concluding important provisions to the only international maritime counterterrorism convention (DHS/USCG 2005, Interview ID: 003).

The WARM SEAS VOYAGER case turned out safely, but underscored for national leaders the challenges of complex interagency coordination in response to a potential threat in the maritime commons. Further, this case pointed to the importance of interagency coordination focusing on national

security outcomes rather than which agency was in charge and which was subordinate to the other (Interview ID: 013, Interview ID: 003).

INTERAGENCY THEMES: In 2005, when the WARM SEAS VOYAGER case took place in the Atlantic Ocean, the nation was at war and all instruments of national security—particularly interagency communities at the federal, state, regional, and local levels across the country—were focused on the "War on Terror," and preventing further terrorist attacks in the country, and abroad. This maritime case was a punctuating event that took place in the context of an interagency transition where national-level policymakers and operational planners were in the process of shaping maritime security doctrine and framing the content of the National Strategy for Maritime Security. Further, WARM SEAS VOYAGER received high-level attention within the U.S. government because interagency leaders wanted to ensure they were positioned appropriately (and viewed as proactive) in dealing with—what some thought could be—a maritime attack from terrorist elements. In 2005, this case served as a harbinger for multi-agency efforts in resolving maritime security threats; and today, offers some revealing themes for the role of interagency cooperation:

(1) *National-level leadership and interagency protocols must clearly establish the lines between a national security and law enforcement event.* The interagency players were divided on whether to handle this as a Homeland Defense (Title 10, military) case with a national security focus, or a Homeland Security (Title 14, law enforcement) mission with an interdiction posture. The available intelligence information; and data provided by the vessel's owners and operators led decision-makers at the Departments of Homeland Security (Coast Guard), Defense (Homeland Defense), and Justice (Federal Bureau of Investigations) to either: (1) assume the worst possible scenario (i.e. the vessel could be a floating bomb destined for a location where there is a nuclear power plant) and handle it from the start as a security threat; or (2) prosecute the case following law enforcement protocols and only raise the level of engagement when the facts dictate (i.e. board the vessel at a safe distance offshore to inspect the vessel, crew, and cargo for any irregularities) using standard operating procedures.

(2) *No matter how effectively the interagency process works, maritime security efforts are handicapped by the absence of a single authority to coordinate and synchronize complex maritime events.* The WARM SEAS VOYAGER case was adjudicated at the highest levels of the government

(National Security Council) because there was no single authority or executive agent for processing major maritime cases. The interagency process was fragmented and inefficient because there were redundant and overlapping capabilities; the Navy was prepared to conduct Visit, Board, Search, and Seizure (VBSS) or Seal team operations; the Coast Guard could engage with a Maritime Security Response Team (MSRT) to conduct an enhanced law enforcement boarding; and the Federal Bureau of Investigations (FBI) was positioned with its Hostage Rescue Team (HRT) in support of maritime operations. The good news was that everyone was able and willing to assist; the bad news was that the interagency process had no formal coordinating mechanism to establish the best course of action. Therefore, each stakeholder suggested a different range offshore to conduct its boarding(s), there was no agreed-upon location to conduct operations, nor was there a safe alternative port or anchorage location to conduct a pre-arrival inspection of the vessel, cargo, and crew. Many questions remained open for debate as the vessel proceeded inbound for the North Carolina coastline.

(3) *National-level intelligence structures appear fragmented and inconsistent when supporting maritime security cases.* The intelligence picture for this case was unclear and initial suspicions could not be validated or

confirmed in a timely manner. The newly-established (2003) National Counterterrorism Center (NCTC) attempted to provide an integrated threat assessment, drawing maritime information and vessel history from multiple sources, including the National Maritime Intelligence Center (NMIC), Office of Naval Intelligence (ONI), Intelligence Coordination Center (ICC), Defense Intelligence Agency (DIA), and National Targeting Center (NTC) operated by Department of Homeland Security/Customs and Border Protection (CBP). The Office of the Director of National Intelligence (established by Intelligence Reform and Terrorism Prevention Act of 2004) was just standing up operations (April 2005), and was not yet part of the strategic operational planning being conducted by the intelligence community. The maritime intelligence picture in general, and the available information regarding the WARM SEAS VOYAGER (i.e. vessel, owner, cargo, crew, track history) in particular, were incomplete.

COLLECTIVE ACTION THEMES: This case was a *focusing event* for the NSC and broader maritime COI because the NSMS, as a national-level policy, was being finalized and the counterterrorism community within the USG was focused sharply on preventing another terrorist attack on the homeland—within any domain—including the maritime commons. The fragmented

response to this case highlights the need to clarify lines of responsibility within the national command structure and the maritime security community; and reinforced the plan to operationalize the specific tasks contained in national-level policy (Brooks 1986, Till 1994, NSMS 2005), particularly the Maritime Operational Threat Response (MOTR) process.

The series of *focal points* in this case made it a type of punctuating event, allowing the interagency to overcome previous organizational and policy hurdles to significantly expand whole-of-government connectivity among agencies, departments, and military elements at federal, state, and local levels (Wilson 1989, Raach & Kaas 1995, Donley 2005). Although WARM SEAS VOYAGER turned out to be a successful maritime law enforcement case with no apparent terrorist nexus, some analysts within the maritime security COI considered this an exemplar for nefarious actors (inside or outside the country) to "pulse our system" and determine how prepared the USG interagency was to prevent or respond to a maritime attack.

If this case had been a Vessel-Borne Improvised Explosive Device (VBIED), there could have been many elements of the maritime transportation system and port infrastructure adversely impacted, yet relatively few agencies participating in the actual interdiction. From a collective action perspective, to the extent individuals, communities, or agencies benefit from the maritime

response (without any investment on their part), they are *free-riders*, benefiting from something they didn't previously invest in. There is a natural tendency for groups (individuals or agencies) to withhold their contribution to support collective efforts while enjoying the benefits of the broader group. And members of that community may defect when they consider their support to the collective enterprise will not impact its success or failure. Government may use laws and statutes to induce, coerce, or incentivize participation and prevent parties from reneging on their responsibilities (Olson 1965).

This case was not only a maritime *focal point*, showing the importance of expanded coordination among interagency actors, but pointed to the potential need to establish a single authority (global synchronizer or executive agent) within the U.S. government that is responsible for maintaining and executing all maritime policies (Freidrich and Mason 1940, Miyakawa 2000, NSMS 2005, NRC 2008). It further revealed that expanded coordination will often occur if participants identify a leader to organize efforts and target organizational energy to support a common purpose. And while problems often surface along the way from uncertainty or insufficient information, coordination itself—as a prerequisite to successful collective action—can help ameliorate that challenge (Medina 2007).

## Case Study Profiles, post-NSMS

Table 5.3
*Case Studies, Post-NSMS*

| Case Study | Nationality Flag State | Last Port of Call (LPOC) | Next Port of Call (NPOC) | Nature of Cargo | Threat Reporting | Data Sources |
|---|---|---|---|---|---|---|
| **M/V Maersk Alabama (MA), 2009 Non-Routine** | United States | Oakland, California | Mombasa, Kenya | World Vision humanitarian cargo; vegetable oil | Somali pirates | Interviews, interagency reports, open source documents |
| **M/V Sun Sea (SS), 2010 Non-Routine** | Liberia | Thailand | Vancouver, Canada | General cargo; suspected illegal migrants | Reports of 492 illegal Sri Lankan migrants | Interviews, reports, open source documents |
| **S/V Tortuga (TOR), 2010 Routine** | United States, (2) Lithuanian crew | Joao Pessoa, Brazil | Sao Vicente or Praia, Cape Verde | Suspected cocaine smuggling | Republic of Cape Verde requested permission to board | Interviews, interagency reports, open source documents |

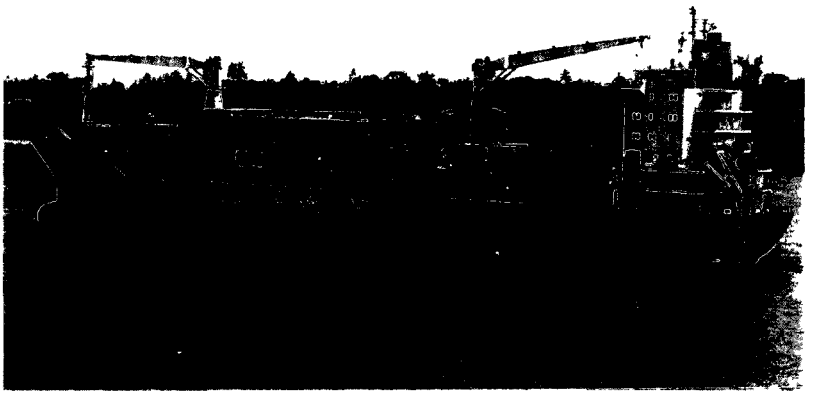

*Figure 5.4* M/V MAERSK ALABAMA (2009)

BACKGROUND: In April, 2009, the MAERSK ALABAMA hijacking and piracy case began with four Somali pirates seizing the cargo ship 240 nautical miles southeast of the Somali port city of Eyl. It was the first successful pirate seizure of a ship registered under the American flag since the early 19th century, and was the sixth vessel in a week to be attacked by pirates who had previously extorted ransoms in the tens of millions of dollars (DHS/USCG 2009, Interview ID: 003, Interview ID: 020, Interview ID: 021)

The ship, with a crew of 20, was loaded with 17,000 metric tons of cargo, and bound for Mombasa, Kenya when it was attacked by the pirates. The crew attempted to repel the hijackers by firing flares at the pirates, but the pirates successfully boarded the ship. The crew locked themselves in the engine room,

but the captain was taken hostage by the pirates. The crew had received anti-piracy training and had conducted security drills aboard the ship as recently as the day before the pirate attack. Once the pirates captured the captain they found that they could not control the ship's movements due to defensive measures taken by the crew. The pirates eventually fled in one of the ship's lifeboats with nine days of food rations and the ship's American captain (DHS/USCG 2009, Interview ID: 003, Interview ID: 020, Interview ID: 021).

On 9 April 2009, the U.S. Navy destroyer USS BAINBRIDGE arrived in the Gulf of Aden to respond to the hostage situation and a stand-off ensued between the navy and pirates—who still held the ship's captain hostage. The four pirates on the lifeboat were armed and repeatedly threatened the captain's life and safety. Negotiations were attempted between U.S. government agents and the pirates, but they broke down after the pirates on the lifeboat fired upon one of the Navy ships (DHS/USCG 2009, Interview ID: 003, Interview ID: 020, Interview ID: 021).

Complicating matters, the weather began to deteriorate and the pirates on the lifeboat became restless, so the Navy "calmed them" by persuading them to be towed by the USN vessel. On 12 April, the captain of the MAERSK ALABAMA was rescued after a special forces team of Navy Seal snipers opened fire and killed the three pirates on the lifeboat while it was being towed astern.

A fourth pirate on board the USS BAINBRIDGE—trying to negotiate a ransom—was taken into custody; and later transported to New York to face trial on piracy charges (DHS/USCG 2009, Interview ID: 003, Interview ID: 020, Interview ID: 021).

INTERAGENCY THEMES: The MAERSK ALABAMA case attracted the attention of Americans as well as the international community because it involved a bold and violent act of piracy in one of the most active shipping lanes in the World, and the kidnapping of an American ship captain—in international waters over 200 miles offshore in waters actively patrolled by U.S. Navy warships. This case tested the ligaments that connect all parts of the maritime community of interest, including interagency players, the commercial maritime industry, and coalition of international navies operating off the Horn of Africa and in the Gulf of Aden; and provides several themes highlighting the role of interagency coordination in the maritime commons:

(1) *National-level antipiracy policy has not translated into adequate tactical level success against a burgeoning maritime threat.* The interagency policy established in 2007 has been tested by cases like the MAERSK ALABAMA, but has not yielded an action plan that is able to defeat or deter

the lucrative growth industry off the shores of Somalia; in fact open source documents published by shipping companies, maritime insurance underwriters, and the International Maritime Organization (IMO) indicate the range, weaponry, ship attacks and hijackings, mariners captured, and ransom amounts have all increased in the past five years. In 2008, the National Security Council (with interagency input) issued a report, "Countering Piracy off the Horn of Africa: Partnership & Action Plan," which offers the U.S. plan to combat piracy, incorporating the NSMS (2005) and Policy for the Repression of Piracy and other Criminal Acts of Violence at Sea (2007), yet the impact of these policy documents has been unclear at best.

(2) *Increased coordination with the commercial maritime industry is needed to address the piracy threat with a comprehensive approach.* The interagency policy emphasizes participation with international partners and naval forces, but is less clear about the contribution of the group most affected by piracy—the commercial maritime industry. It appears that antipiracy planning is focused primarily within the U.S. government and fails to fully leverage the unique contribution of the private sector. The 2008 plan recognizes that nations have a common interest in achieving two complementary objectives: (1) to facilitate the vibrant maritime commerce

that underpins economic security, and (2) protect against ocean-related criminal and dangerous acts, including piracy. It also affirms U.S. intent to lead and support international efforts to repress piracy, and urge other states to take decisive action both individually and through international coordination. The plan's objective is to repress piracy off the Horn of Africa in the interest of the global economy, freedom of navigation, and regional states. Accordingly, it focuses on "immediate operational measures to prevent, disrupt, and punish acts of Somali pirate organizations and respond to the growing threat, and be mutually supportive of longer-term initiatives aimed at establishing governance, rule of law, security, and economic development in Somalia" (NSC 2008). The MAERSK ALABAMA and subsequent cases highlight a growing piracy threat in the Africa region that will not be resolved by announcing "partnerships and action plans," or assigning more USN warships to the region—reflecting a clear and present maritime challenge for interagency leadership.

(3) *There must be a systems approach with formal mechanisms for industry and international representatives to contribute.* While MAERSK ALABAMA raised public awareness of the piracy challenge, there still is a need for greater attention to this threat within the interagency itself (Interview ID:

020). This case highlighted the strength of interagency processes—operationalized through the MOTR process—and points to the need for deeper understanding of maritime security as a *system*, with interconnecting relationships across elements of strategy and policy. The NSMS (2005) has eight supporting plans—all of which relate directly or indirectly to the execution of antipiracy efforts (Figure 1.1). In particular, there are five supporting plans within the NSMS which remain largely undeveloped and require stronger linkages to the overall maritime policy and antipiracy strategies and plans already in place (promulgated since 2007): Domestic Outreach, International Outreach, Maritime Transportation Security, Maritime Commerce Security, and Maritime Infrastructure Recovery. It is inspirational to see USN Seals carry out sniper operations with such precision, and safely recover the kidnapped captain of the MAERSK ALABAMA, but this case calls for a fully integrated joint, multi-agency, international approach which neutralizes the pirates who are disrupting maritime security.

This case was considered one of the most significant MOTR cases handled by the interagency (since the MOTR process was established in 2005) and created a groundswell of support for increased interagency coordination, reflecting that the MOTR process is transferable and adaptable to any operational scenario (Interview ID: 003, Interview ID: 013).

COLLECTIVE ACTION THEMES: Notwithstanding some naval headlines heralding progress in global antipiracy efforts, Africa-based piracy is on the rise—expanding in number of hijackings and kidnappings as well as range of operations—primarily based in Somalia.[8] Effective policy has been promulgated, and well-organized international maritime task forces are in place, yet the pirates appear emboldened and determined to expand their operations. Collective action theory suggests groups can organize to combine efforts, bringing together groups of *principal-agents* to "voluntarily retain the residuals of their own efforts and collectively solve difficult problems in the global commons" (Ostrom 1990), including the persistent threat of piracy.

As the number of international navies, coast guards, and commercial maritime participants expand their presence (off the Horn of Africa, Gulf of Aden, and coast of Yemen for example), the coordination challenge increases. Group members must decide what they want, how prepared they are to contribute to the collective enterprise, and how to coordinate their efforts for the greater good. As with any complex mission taking place in an

[8] The International Chamber of Commerce (ICC) International Maritime Bureau (IMB) issued a global piracy report indicating that in the first nine months of 2011 piracy rose to record levels, with Somali pirates responsible for nearly 60% of the 352 attacks reported, and pirates have captured 625 and killed eight seafarers worldwide during that same period (ICC 2011)

operationally-risky multinational environment, coordination problems are especially pervasive for large and multiple competing groups (Carney 1987).

The role of the private shipping companies and commercial maritime industry is singularly important in this case. Public-private partnerships directly impact collective action efforts, and foster movement of groups across private and public boundaries (Bratman 1993). Rather than *free-ride* and rely solely upon the protection of naval escort vessels in the region, commercial vessels have implemented best practices to adopt security measures that decrease the probability of attacks and hijackings.[9]

However, the private sector operates a commercial business so *transaction costs* are a significant issue for shipping companies facing the piracy threat; while they do not want their ships to be hijacked, they carefully balance risks and costs associated with antipiracy measures. Participating vessels desire to achieve benefits of collective security while minimizing costs—time, efforts, and resources—to contribute to overall security and protect their valuable cargo. Without mechanisms to effectively negotiate collective efforts, costs can overwhelm commercial shippers, causing loss of business, or forcing private companies to withdraw from the market. With

[9] NATO, EU, IMO, DOT, and other maritime organizations have published comprehensive Antipiracy Best Management Practices to improve security measures taken by commercial shipping companies (ICC 2001)

well-designed institutions, cooperative agreements, and collective security measures, transaction costs can be better managed by all parties (Hardin 1982).

*Figure 5.5* M/V SUN SEA (2010)

BACKGROUND: In August, 2010 the Canadian Navy, Public Safety Canada,[10] Canada Border Services Agency and the Royal Canadian Mounted Police (RCMP) worked with their U.S. counterparts to develop an interdiction plan for a vessel carrying undocumented migrants from Sri Lanka through the Straits of Juan de Fuca between the United States and Canada. Canadian and U.S. forces participated in this integrated interagency mission (Operation POSEIDON), and coordinated by Canada Command—the organization responsible for the oversight of domestic operations and military support to

[10] Canada's Department of Public Safety is the equivalent organization to America's Department of Homeland Security

Canadian civil and law enforcement authorities. Elements of Canada's Joint Task Force (Pacific) were assigned to support the operation in the vicinity of Vancouver Island, with HMCS WINNEPEG. The task force was reinforced by U.S. maritime forces and the intelligence community because the vessel had suspected ties to the Tamil Tigers foreign terrorist organization, and it was unclear whether the ship's intended destination was on the Canadian or American side of the border. When the Canadian boarding team embarked the SUN SEA, it found nearly 500 Sri Lankan refugees. Reports indicated the vessel, while cramped, was in better shape than expected, was relatively clean, and migrants were calm and compliant. In total, SUN SEA arrived with 380 men, 63 women, and 49 children on board. Within days, the 492 migrants had been relocated (from Vancouver Island) to appropriate detention facilities on the Canadian mainland and had completed initial examination portions of the migrant/refugee review process (DHS/USCG 2010, Interview ID: 003).

INTERAGENCY THEMES: The SUN SEA case afforded the opportunity to examine our interagency coordination, national-level policies and operational plans for working cross-border maritime security missions with our counterparts in Canada. The U.S. conducts annual security exercises with Canada, and has a mature bi-national relationship with our northern neighbors

through the North American Aerospace Defense (NORAD) Command (over 50 years of experience), as well as strong coordinated maritime relations including a standing ship rider agreement on the Great Lakes; however operational maritime events like SUN SEA are quite rare because—in this case—it was unclear what the destination of the vessel actually was until late in the final transit—as it proceeded toward the shared U.S./Canadian waterway in the Straits of Juan de Fuca. The challenge of processing a vessel overloaded with international refugees, and complexity of multi-national coordination required in this case offers several themes relative to interagency cooperation:

(1) *Formal avenues of communication and coordination must be established and exercised in advance of a maritime incident.* While the MOTR process[11] helps U.S. interagency players process the operational response to law enforcement actions, the SUN SEA case underscores the utility of early coordination with international (in this case Canadian) counterparts reinforced by strong local, regional, and national-level communications, as well as liaison officers assigned to regional maritime coordination centers on both sides of the border, as well as at respective embassies. Initial reports from the intelligence

[11] Although the MOTR process is only authorized for the U S interagency—and does not have a bi-national equivalent between the U S and CANADA—frequent informal cross-border communications take place among U S and Canadian maritime security officials at all levels of government

community were provided early enough to allow for extensive planning and coordination, but reports were inconsistent regarding the next port of call (Canada or U.S.) and total number—and nationality—of refugees on board the SUN SEA.

(2) *There must be a fully integrated and coordinated interagency plan to determine detainee disposition.* The interagency process must include a well-organized pre-identified plan that addresses the processing of undocumented migrants, international refugees, prisoners, combatants, or detainees of any kind. As this case reflects, the disposition of individuals could involve national security objectives with a focus on intelligence-collection, safety-of-life at sea with the rescue of mariners in distress, prisoners held for further military processing, or a criminal case with a focus on law enforcement and collection of evidence for a future civil court hearing. Each of the above categories have unique implications for handling, transport, legal rights, detention, authorities, jurisdiction, interviews, interrogations, chain-of-custody, and rules of evidence which must be part of policy and planning factors *before* the interdiction is made.

(3) *Horizontal coordination is essential among national security staff elements, departments, and international counterparts.* This case underscored the criticality of interagency communications across the U.S. government and with Canadian counterparts through an inclusive cross-governmental interagency conference call with officially-designated representatives assigned to participate—junior enough to have a working knowledge of the process and potential operational cases, and senior enough to possess (or gain access to) decision-making authority for their agency, department, or organization. The SUN SEA case benefited significantly from the established interagency conference call process through the Global Maritime Operational Threat Response (MOTR) Coordination Center spearheaded by the Department of Homeland Security and U.S. Coast Guard. The diplomatic, legal, informational, economic, environmental, safety and security requirements associated with some maritime cases often require a rapid, formalized, systematic interagency mechanism (like the MOTR process) that can be activated as often as necessary before, during, and after the case.[12]

[12] Canada has established the Maritime Event Response Protocol (MERP)—for maritime security purposes inside Canada, similar to the MOTR process inside the US—and it is expected that a formal bi-national cross-border mechanism will be developed in the future

COLLECTIVE ACTION THEMES: The SUN SEA case not only benefitted from the MOTR process in place within the U.S., but also leveraged existing cross-border bi-national cooperation in place with the Combatant Commander (NORAD/USNORTHCOM, headquartered in Colorado Springs) and the Canadian counterpart organization (CANADACOM in Ottawa). Further, the interface among USG interagency representatives was complemented by information sharing—albeit sporadic at times—between the intelligence services of both countries. This *collective action* among national-level agencies was essential to prosecute the case because it was unclear (even after the vessel entered the Strait of Juan de Fuca between Washington state and Vancouver, British Columbia), where the vessel was actually going to land—turn south to the United States or north to Canada.

This dynamic process—sharing of critical information as the ship approached the coastline—points to the need for increasing levels of trust and information-sharing during the case, similar to *social dilemmas* faced when resolving a resource-constrained problem in a public-private environment. For example, the *prisoner's dilemma* reveals that while supportive of group action, some actors pursue activities that only reward them individually, despite being counter to their broader commitment to collective action. To serve the ultimate public good, each party must yield something of value so the

"exchange" will make them better off; and it takes repeated trials of mutually-valued coordinated action, based on increased levels of trust and experience, to resolve the case (Weimer & Vining 2005).

This case also provides the conceptual framework for commercial maritime industry participation with government to improve policy enforcement, and enlist the role of the private sector within the global maritime commons (GAO 2005, Frittelli 2008), minimizing the tendency—of individuals and organizations—to default to the path of least resistance as *free riders*. Collective action in a global economic market with a common pool resource (like maritime security) requires active participation to support collective security as well as movement of large volumes of information across the structural seams of government, industry, public, and private organizations (Melucci 1996).

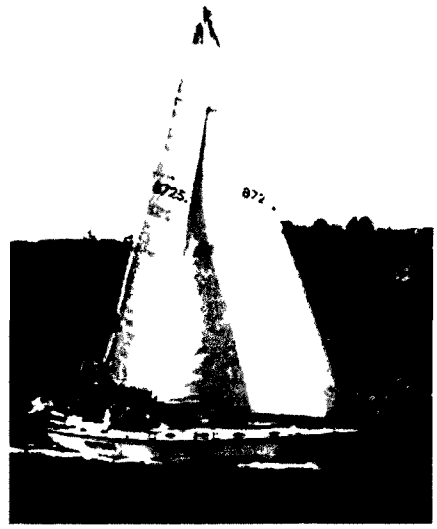

*Figure 5.6* S/V TORTUGA (2010)

BACKGROUND: In August 2010, a Law Enforcement Detachment (LEDET) embarked on HMS GLOUCESTER boarded the Florida-registered sailing yacht TORTUGA and escorted the vessel to Cape Verde where authorities discovered cocaine hidden within the rudder. The operation was coordinated by the Maritime Analysis and Operations Centre - Narcotics (MAOC-N) based in Lisbon, Spain acting on intelligence from a French Central Office against Illegal Narcotics Trafficking investigation (DHS/USCG 2010, Interview ID: 003).

The granting of permission to stop, board, and search the vessel in this case was done pursuant to Article 17 of the 1988 U.N. Convention Against Illicit

Traffic in Narcotic Drugs and Psychotropic Substances, which both the U.S. and Republic of Cape Verde are parties to. The U.S. interagency coordination was carried out primarily by the Coast Guard Liaison Officer to the Department of State, by initiating a Maritime Operational Threat Response (MOTR) conference call to determine the U.S. official response to the request from the Republic of Cape Verde to stop, board, and search TORTUGA. Participants in the MOTR call included interagency representatives from U.S. Coast Guard, and Departments of State, Justice, and Defense (DHS/USCG 2010, Interview ID: 003).

The vessel was suspected of smuggling cocaine and was being actively tracked from Brazil to Cape Verde as part of an ongoing investigation by Joint Interagency Task Force-South (JIATF-S) and European Union (EU) authorities. TORTUGA's next port of call was uncertain, but intelligence sources indicated it could be destined for Praia, Cape Verde. The U.S. interagency representatives agreed to allow Cape Verde to stop, board, and search the vessel, but required a secondary diplomatic response if additional action was required due to suspicious findings. Cape Verde authorities subsequently reported to the U.S. Department of State that 27 packages of cocaine were found on board the vessel during a dockside inspection. And the two

Lithuanian nationals on board were arrested by Cape Verdean officials (DHS/USCG 2010, Interview ID: 003).

INTERAGENCY THEMES: The TORTUGA case included an unusual combination of operational, diplomatic, international, legal, and interagency factors which highlights the versatility required by cross-governmental players when confronting 21st century transnational crime in the global maritime commons. The MOTR conference call process enabled a wide range of interagency stakeholders to participate in the deliberations, evaluation of international law, and ultimate disposition of the case in Europe. The actions of this small sailing vessel—making a trans-Atlantic voyage with contraband hidden on board—activated many elements of the maritime security network including international liaison officers on both sides of the Atlantic, the State Department, Joint Interagency Task Force—South (JIATF-S), British Navy, Global MOTR Coordination Center, law enforcement officials of the Republic of Cape Verde, and maritime nodes of the intelligence community, as well as the newly established U.S. Africa Command (AFRICOM), headquartered in Stuttgart, Germany. This case offers a unique window into domestic and international factors that influence the role of interagency cooperation:

(1) *Maritime security unity of effort must extend beyond the U.S. interagency to include international stakeholders.* Interagency representatives coordinated the U.S. action regarding the handling of the TORTUGA case (in response to the diplomatic request from the Republic of Cape Verde), but the sequence of jurisdictional authorities and permissions granted by the U.S. government were not fully observed. U.S. officials agreed to: (1) confirm registry of the vessel, and (2) authorize Cape Verde to stop, board, and search the suspect vessel, cargo, and persons on board; but failed to waive any authority if Cape Verde discovered evidence of illicit activities during the boarding. The interagency intended to draft language for a secondary response if necessary, requiring Cape Verde officials to make a separate diplomatic approach to the U.S. for additional action regarding the vessel, crew, or cargo if drugs were found. While the MOTR process ensured the multi-agency coordination was clear within the U.S. law enforcement community, there was a breakdown in the enforcement actions subsequent to that because the next report—after the U.S. authorized the boarding by Cape Verde—was that drugs were seized and crewmembers arrested as a result of a dockside vessel inspection of the TORTUGA.

(2) *Key positions located at the right interagency nodes make a significant difference in coordination efficiency.* This case reinforced the importance of filling designated positions at strategic locations within the interagency to ensure key roles are pre-identified, pre-positioned, and pre-authorized to enable a series of decisions on behalf of agencies and departments within the USG. The operational urgency, on-scene weather conditions, and potential risk to delaying action in the field during cases such as TORTUGA can adversely impact the outcome if interagency and diplomatic action takes too long. For example, the Coast Guard liaison officer at the State Department, British liaison officer at JIATF-South, AFRICOM maritime representatives, interagency MOTR conference call contacts, and maritime intelligence officials were instrumental in executing a timely and effective plan of action.

(3) *The maritime security reporting and decision-making process must be standardized and consistent.* Collective efforts of the actors involved in the TORTUGA case yielded the desired outcome from a safety and security standpoint, but there was too much dependency upon personalities in several key interagency positions. While it is a clear advantage to have "subject matter experts" assigned to key positions to deliver strong knowledge, skills and

abilities, the nature of collective decisions and interagency coordination within the maritime domain calls for intentional, systematic, and repeatable processes that are not personality-dependent. Otherwise a personal emergency or schedule change that impacts one link in the informational or coordination chain can cause an undesirable—and sometimes costly—disconnect or delay in the process.

COLLECTIVE ACTION THEMES: The TORTUGA case required the participation of a wide array of actors across the interagency community including joint military commands, multiple counterdrug agencies, multinational interlocutors, and foreign law enforcement officials. While modern technologies enable unprecedented access to information through the worldwide web and satellite-based communications, the maritime domain offers examples (like TORTUGA) where a suspect vessel is difficult, or impossible, to locate during an open ocean transit—which is further complicated when law enforcement information is not shared across interagency boundaries.

Within the United States, the naval services and maritime intelligence organizations devote significant resources to maintain a maritime Common Operating Picture (COP) to support situational awareness within the maritime

domain. This case underscores the need for an international cross-domain COP that allows movement of information horizontally among maritime stakeholders, and vertically across all levels of security classification—mitigating risk in an environment where public-private vessels and commercial shippers share a *common pool resource* in the maritime commons and mutually benefit from *collective security*. The development of a global maritime information exchange system supports this objective and the call for new or modified policies to enable expanded international collaboration, and to address foreign disclosure restrictions (Haas 1980, Carafano & Weitz 2007, NRC 2008).

As with many *social dilemmas* in the collective action context, there is an interdependent relationship between governance and systems where policies can catalyze or constrict technology development; and similarly, technology can influence the formulation of new, or modification of existing, policies. Multi-agency collaboration and open lines of communication among policymakers are needed to build new capabilities and eliminate barriers—where legally permissible—posed by data controls, system certification and authentication, privacy and security classification protocols (Relyea 2004, GAO 2005, GAO 2006, NRC 2008, Frittelli 2008).

Agencies—like individuals—will not always voluntarily act in the interest of the *public good* or naturally engage in *collective behavior* to support the common good and properly manage resources (or in this case, law enforcement information) and may require coercion, enforcement, or incentives to compel action (Ostrom 1990, 2002). Governments can create maritime security *focal points* through legislation and rule-based incentives, but the TORTUGA case highlights the potential role of international bodies such as the UN, IMO, NATO, and EU to introduce "collaborative governance" and adjudicate the potential conflict between individual agency/organization interests and achievement of shared interests for groups with equities in the global maritime commons (Donahue & Zeckhauser 2006).

Further, *transaction costs* must be managed in a *principal-agent* context by those in authority while delegating certain actions to agents who actually carry out *collective action* efforts (within the global maritime commons). Principals possess authority to make certain decisions, and try to align agents' preferences with their own to minimize losses to the agents. This delegation process entails a trade-off between the benefits of having agents taking action and the effort required to monitor their behavior (Olson 1965, Eisenhardt 1989)—offering potential maritime applications by considering who are the *principals* and *agents* in the maritime security COI and how could they

influence collective behavior at the local, regional, national, and international level.

### Linkages to Theoretical Framework and Hypotheses

This section will identify the linkages between interagency coordination themes of the case studies, input from expert interviews, and the theoretical framework—collective action (CA) theory, and hypotheses being tested. The six maritime case studies were examined through the theoretical lens of collective action. Further, the research questions—used to interview 35 maritime security experts—were designed to uncover the most significant interagency themes and operationalize collective action themes. The below summary (Table 5.4) is designed to help distill the primary findings of the case studies and demonstrate the strongest linkages to research hypotheses and CA theory from this phase of the research.

The key elements of collective action theory overlap with related theories and frameworks within the social sciences, so for the purposes of this summary, the research findings highlight the central role of interagency coordination in all six case studies and point to the following collective action themes which are incorporated into the assessment: collective action coordination (Olson 1965, Carney 1987); tragedy of the commons (Harden 1969,

Sandler 2004); free-riders (Olson 1965, Bratman 1993); prisoner's dilemma (Melucci 1996, Weimer & Vining 2005); transaction costs (Hardin 1982, Weible 2008); conformity costs (Ostrom 1990, Searle 1990); public goods (Samuelson 1954, Ostrom 1990); focal points (Donahue & Zeckhauser 2006, Medina 2007); externalities (Gilbert 1989, Sandler 2004); and principal-agent relationships (Olson 1965, Ostrom 1990).

Table 5.4
*Linkage of Case Studies, Hypotheses, and Theory*

| Case Study | Interagency Themes | Collective Action Theory |
|---|---|---|
| **GISSAR**<br><br>Russian fisheries case in Bering Sea (NR) | + All department and agencies with maritime equities must be fully engaged throughout the case (H3, H4, H7, H8, H9, H11)<br><br>+ Law enforcement capabilities can be significantly enhanced by technology (H1, H2, H5, H7, H9, H11)<br><br>+ Effective interagency coordination at the national level can enhance the success of field operations (H1, H3, H4, H5, H6, H9, H11, H12) | Collective action offers a range of factors that affect decisions, especially the importance of efficacy and concern about the collective good (Olson 1965). (Collective Action)<br><br>"Global collective action" involves principles of international cooperation; identify factors that promote or inhibit it at the global level (Sandler 2004). (Tragedy of the Commons)<br><br>Develop automated systems to fuse data bases and apply technology and leverage best practices across intelligence and information providers (Panayides 2006, Ince, Topuz, Panayirci & Isik 2000). (Conformity Costs)<br><br>There is a need to impose costs on individual groups to achieve collective goals despite their objection. These costs occur when the collective decision differs from that of an individual's ideal preference. Integrating and negotiating common courses of action will require tradeoffs. Governments are continually weighing what costs its citizens are prepared to bear (Ostrom 1990). (Conformity Costs) |

Table 5.4 (cont'd)

| | | |
|---|---|---|
| **LINA MARIA**<br><br>Major drug seizure in Western Pacific (R) | + Formal standardized procedures enhance reliable interagency coordination (H1, H2, H3, H4, H7, H9, H11)<br><br>+ The post 9-11 threat environment requires an internationalized approach (H2, H5, H8, H10)<br><br>+ Multiple sources of reliable intelligence allow more efficient use of scarce resources and increase the probability of detection (H1, H2, H3, H4, H5, H6, H9, H11, H12) | Public goods exist and will be destroyed if exploitation is not controlled through external intervention or coercion. Action must be taken to align personal gain with the group good. Those who pursue self-interest impose collective costs; when the common resource is lost, all members face ruin because they tried to maximize self-interest (Hardin 1968, Sandler 2004). (Tragedy of the Commons)<br><br>Collective action among elements of government must leverage costs to implement policies (Gilbert 2006). Costs are often divided by search, negotiation, monitoring, and enforcement costs (Weible 2008). (Transaction Costs)<br><br>Optimize intelligence collaboration and dissemination to improve notification and warning indicators as well as detection and monitoring effectiveness (Betts 1978, Hughes-Wilson 1999, Donley 2005). (Collective Action)<br><br>Expand capabilities of moving information across security classification levels, reduce over-classification, and maximize the flow of information among interagency stakeholders (Davis 1952, Kaiser 1989, Hubbard 2005). (Transaction Costs)<br><br>Synchronize operational planning, standard operating procedures, and rule sets across joint, interagency, multinational, and coalition organizations (Goertz 2005, OPNAV 2007, USCG 2007, NRC 2008). (Principal-Agent) |

Table 5.4 (cont'd)

| | | |
|---|---|---|
| **WARM SEAS VOYAGER**<br><br>Suspected terror nexus on cargo vessel (R) | + Interagency protocols must fundamentally establish maritime events as national security or law enforcement (H1, H3, H4, H5, H6, H7, H9, H12)<br><br>+ The maritime security COI and interagency would benefit from establishing a single authority to coordinate and synchronize maritime events (H1, H2, H3, H4, H5, H6, H11, H12)<br><br>+ National-level intelligence structures appear fragmented when supporting maritime security cases (H1, H2, H3, H4, H5, H6 H7, H9, H10, H11, H12) | Significantly expand whole-of-government connectivity among agencies, departments, and military elements at federal, state, and local levels (Wilson 1989, Raach & Kaas 1995, Donley 2005). (Collective Action)<br><br>There is a natural tendency for groups to withhold their contribution to support collective efforts while enjoying the benefits of the broader group. Members defect when they consider their support to the collective enterprise will not impact its success or failure. Government may use laws and statutes to induce participation and prevent parties from reneging (Olson 1965). (Free Riders)<br><br>Establish a single global synchronizer or executive agent within the U.S. government who is responsible for maintaining and executing the maritime policies (Freidrich and Mason 1940, Miyakawa 2000, NSMS 2005, NRC 2008). (Focal Points)<br><br>Clarify lines of responsibility within the maritime security community and operationalize the specific tasks contained in national-level policy (Brooks 1986, Till 1994, NSMS 2005). (Transaction Costs)<br><br>Coordination will occur if participants identify a leader to organize efforts and target energy to common purposes. Coordination is a prerequisite to successful collective action, and problems often surface from uncertainty or insufficient information (Medina 2007). (Focal Points) |

Table 5.4 (cont'd)

| | | |
|---|---|---|
| **MAERSK ALABAMA**<br><br>Somali piracy & kidnapping off the Horn of Africa (NR) | + National level antipiracy policy has not stopped a growing regional maritime threat (H1, H2, H3, H4, H5, H6, H7, H8, H9, H10, H11)<br><br>+ Increased coordination with the commercial maritime industry is needed to impact piracy (H2, H6, H7, H9, H10, H12)<br><br>+ There must be a systems approach to maritime security with established mechanisms for industry and international representatives to participate (H1, H2, H3, H4, H7, H8, H10, H12) | Group members must decide what they want, how prepared they are to contribute to the collective enterprise, and how to coordinate their efforts for the greater good Coordination problems are especially pervasive for large and multiple competing groups (Carney 1987) (Collective Action)<br><br>Public-private partnerships directly impact collective action efforts, foster movement of groups across private and public boundaries (Bratman 1993) (Free Riders)<br><br>Participants desire to achieve benefits of collective action while minimizing costs—time, efforts, and resources—to contribute to collective action decisions Without mechanisms to effectively negotiate collective efforts, costs can overwhelm players, forcing them to withdraw With well-designed institutions, agreements and costs are better managed (Hardin 1982) (Transaction Costs)<br><br>Each collective action player can initiate corrective measures to improve group actions due to interconnectivity and costs (Searle 1990) (Conformity Costs)<br><br>Collective action can organize groups of principals to voluntarily retain the residuals of their own efforts and collectively solve common problems in the maritime commons (Ostrom 1990) (Principal-Agent) |

Table 5.4 (cont'd)

| | | |
|---|---|---|
| **SUN SEA**<br><br>Sri Lankan refugee case w/Canada (NR) | + Avenues of communication and coordination must be established and exercised in advance of maritime security events (H1, H2, H3, H4, H5, H7, H8, H12)<br><br>+ There must be a fully integrated interagency plan to determine maritime detainee and refugee disposition (H1, H2, H3, H4, H5, H7, H12)<br><br>+ Horizontal coordination for maritime cases is essential among national security staff elements, departments, and international counterparts (H1, H2, H3, H4, H5, H6, H8, H9, H11, H12) | Provide a framework and process for commercial maritime industry participation with government to improve policy enforcement, and enlist the role of the private sector (GAO 2005, Frittelli 2008). (Free Riders)<br><br>While supportive of group action, some stakeholders pursue activities that reward them individually, despite being counter to their commitment to collective efforts. Each party must yield something of value so the "exchange" will make them better off. Repeated trials aid mutually-valued coordinated action, so resolution is based on trust and experience (Weimer & Vining 2005). (Prisoner's Dilemma)<br><br>Collective action in a global economic market requires movement of information across organizational seams of government, industry, public, and private organizations (Melucci 1996). (Prisoner's Dilemma)<br><br>Collective action proposes that groups "share intentions" through common activity that requires "common knowledge." Mutual obligations and collective intentional behavior apply (Gilbert 1989). (Externalities)<br><br>Public goods are goods that are hard (or impossible) to produce for private profit, because the market fails to account for their large beneficial externalities. National and maritime security are public goods because they are non-rivalrous, non-excludable public services; consumption of goods by one member does not reduce availability for others, and no one can be excluded from using the goods (Samuelson 1954). (Public Goods) |

Table 5.4 (cont'd)

| | | |
|---|---|---|
| **TORTUGA**<br><br>Drug seizure on U.S. sailing vessel off Cape Verde coast (R) | + Unity of effort in the maritime commons must extend beyond the interagency to include international stakeholders (H2, H5, H8, H10)<br><br>+ Key liaison positions located at certain interagency nodes can make a significant positive difference (H1, H3, H4, H5, H7, H9, H11, H12)<br><br>+ The reporting and decision-making process for maritime security cases must be standardized and resilient (H1, H2, H3, H4, H5, H6, H7, H9, H10, H11) | Build a global maritime information exchange system to expand international collaboration and address foreign disclosure authorities (Haas 1980, Carafano & Weitz 2007, NRC 2008). (Tragedy of the Commons)<br><br>Open lines of communication and collaboration are needed to eliminate barriers associated with data controls, system certification and authentication, privacy and security classification concerns (Relyea 2004, GAO 2005, GAO 2006, NRC 2008, Frittelli 2008). (Prisoner's Dilemma)<br><br>Individuals will not always act voluntarily to achieve the common interest unless there is coercion or incentives to compel action (Ostrom 1990). (Public Goods)<br><br>"Collaborative governance" involves the conflict between individual interests and achievement of shared interests for a group of individuals (Donahue & Zeckhauser 2006). (Focal Points)<br><br>Transaction costs must be managed by those in authority while delegating action to agents who carry out certain collective action. Principals possess authority to make certain decisions, and try to align agents' preferences with their own to minimize loss to agents. Delegation entails a trade-off between the benefits of having agents taking action and the effort required to monitor their behavior (Olson 1965, Eisenhardt 1989). (Principal-Agent) |

## Expert Interview Findings

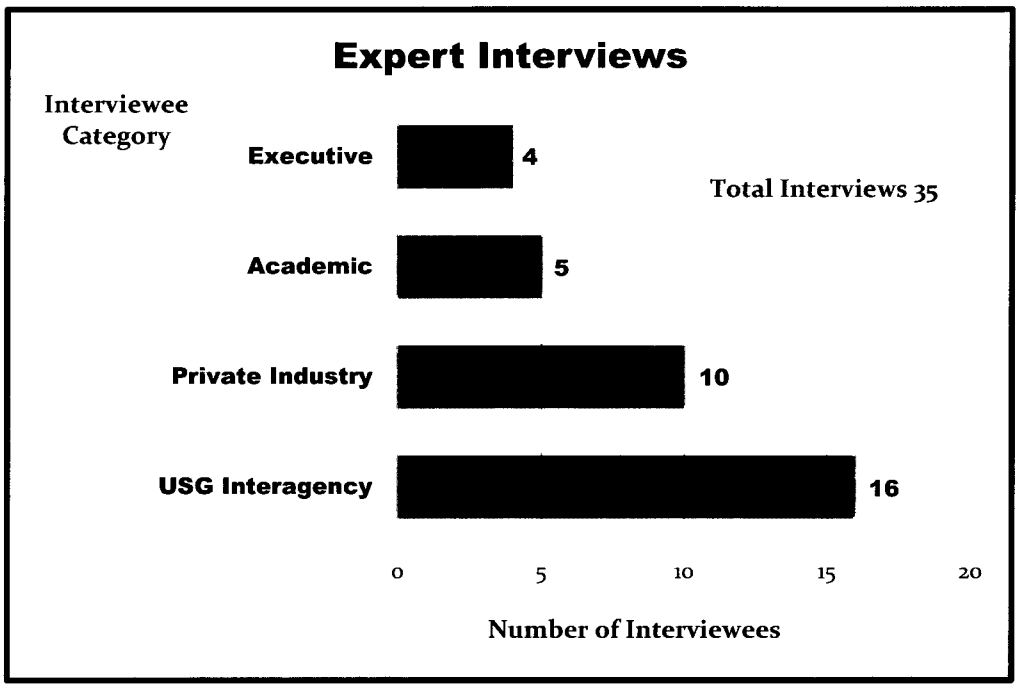


*Figure 5.7* Expert Interviews

In the process of interviewing maritime security experts across the community of government policymakers, academic scholars, field practitioners, and the commercial maritime industry it became increasingly clear that this research topic was ripe for further study and examination. Drawing upon 13 research questions and the findings of six maritime case studies, the research tested 12 hypotheses against the body of expert interviewees with a wide range of geographic, operational, and strategic experience from joint military

assignments, interagency government organizations, academic institutions, and private-sector maritime careers.

The following section synthesizes the findings from 35 expert interviews into 12 broad categories, reflecting the major themes that emerged in response to research questions. The interviews were conducted over a four-month period within the United States—especially in Washington, D.C.—and with maritime and interagency experts in Europe, assigned to the European and Africa Commands; part of the Department of Defense's Geographic Combatant Commanders' Headquarters command in Germany.

This chapter is devoted exclusively to summarizing the response of interviewees—in some cases, it documents their exact words (cited in quotations)—and not the views or opinions of the author. The names of the specific interviewees are protected by a coding system which is provided in Appendix C. The responses of the individuals interviewed are derived from audio recordings of the interviews and written transcripts of those recordings in order to ensure maximum accuracy in translating the answers and remarks of the interviewees.

### *Maritime Transportation System*

"Maritime transportation security is not viewed as a system. And addressing individual parts does not necessarily contribute to overall systemic security." National-level policy as well as maritime transportation safety and security programs are disjointed and fragmented across the interagency because there is "nobody in charge—there is no executive agent." The single greatest threat is "neglect and depreciation" of the maritime transportation security system—failure to invest in the overall national system. Further, there is no congressional pressure to restore a maritime focus (Interview ID: 021, Interview ID: 022, Interview ID: 023).

There must be broad consensus on the importance of maritime security imperatives (safety, security, economic, and environmental) *before* suggesting a collective action model or any other interagency remedy. Within the general public or interagency, there is no clear agreement regarding the strategic importance of maritime sovereignty and the free flow of commerce. Is the public and private sector convinced that a "Maritime 9-11" terror attack on the Homeland would paralyze the national economy? The next version of the NSMS should define the maritime security challenge more clearly so the general public can understand the nature of the problem. A strategic communications plan can help "market maritime security challenges through a

combination of government initiatives, think tanks, congressional studies, maritime industry support, and academic research." Building on these efforts, collective action interagency coordination must ultimately be a "full-time nationally-synchronized process with someone designated in charge." The interconnected nature of the global maritime system and the potential adverse impact of a maritime attack on the U.S. economy argues for the assignment of a global synchronizer or executive agent to carry out implementation of an integrated and fully coordinated maritime security action plan (Interview ID: 009, Interview ID: 014, Interview ID: 032).

There needs to be a deeper understanding why things are happening in the maritime domain—a form of "sense-making" in the maritime commons. The U.S. is a maritime nation with economic arteries connected to harbors, ports, waterways, and coastal regions; and produces few goods anymore, but relies primarily upon the global supply chain and the flow of commerce with just-in-time delivery of goods. There needs to be a significant increase in maritime priorities and understanding of our national dependence upon maritime security as a public good; however, absent a major maritime catastrophic "event" there may not be significant change in maritime policy, because some systems require a "forcing function" to galvanize the public (or maritime community) to change (Interview ID: 004, Interview ID: 028).

Promulgation of the NSMS was an essential first step—a good model to build on—and it can serve as a template "to address broader maritime security issues nationally working through key people to advance maritime objectives and obtain increased funding." On a broader level, strategic communications must involve "messaging" to the general public, journalists, and Congress, because there is a lack of general understanding of homeland security and maritime security (Interview ID: 016, Interview ID: 018, Interview ID: 029, Interview ID: 035).

One poignant example of the failure to manage maritime transportation security as an interdependent system of systems is seen in the cascading impact on dredging requirements around the country as a result of uncoordinated congressional action. An unintended consequence of congressional action in Washington—removal of budgetary earmarks—resulted in a severe adverse impact on dredging requirements on inland waterways and the Great Lakes, because the Army Corps of Engineers (ACE) depends heavily upon non-recurring sources of federal funding—largely from earmarks. Without a designated national-level authority in charge of "all things maritime," issues such as this are often lost in the normal cycle of budgetary and re-election politics—because there is no single executive agent scrutinizing the systemic impact of all legislative and programmatic decisions on the maritime

transportation system—a vital economic artery in the flow of domestic and global commerce (Interview ID: 021, Interview ID: 022, Interview ID: 023).

### *Leadership and Understanding*

The primary challenge is "conceptual in nature—understanding how to view this unique environment." In the post-September 11th, 2001 security environment there needs to be a constant focus on maritime security—viewed as a subset of national security. Currently, there is a sense of prevailing safety and reduced risk in the maritime commons because there have been no maritime attacks on the Homeland. And there is a lack of maritime security awareness among the national citizenry—a perception "that it is being handled" and therefore, we are all free-riders. For example, consider the earthquake in Japan which had a cascading impact on the availability of computer parts globally because of disrupted shipments; so envision a similar disruption to, and corresponding impact on, the maritime transportation system and global supply chain (Interview ID: 005, Interview ID: 031).

Many within the interagency and general public do not know the criticality of the maritime transportation system to the [domestic and global] economy, and focus only on costs/security factors—overlooking economic variables. This contributes to a primary obstacle to maritime security policy:

there is no "political champion" for maritime security. There are many symptoms to this problem, but fundamentally there is a lack of "empowered visionary political leadership" at the national level; and there is no coordinating mechanism to develop and link together a "cadre of maritime security professionals" within the interagency.[13] The catalyst for long-term planning—stimulating NSC, OMB, and the budget process—could be a national-level Federal Advisory Committee (FAC), similar to those supporting homeland security, national infrastructure, etc. [14] (Interview ID: 029, Interview ID: 035).

In addition to the established definition in the NSMS (safety, security, economic, and environmental variables), "economic growth and development" should be added to the terms of reference. Too often, maritime security is only discussed in terms of budget, threats, and risks, when maritime security should be managed as a system—including port management, drilling, ocean policy, tourism, pollution response, waterways management, safety of life at sea—suggesting the broader term "Maritime Domain Management" (MDM) rather than "Maritime Domain Awareness" (MDA) (Interview ID: 029).

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[13] Similarly, the Project on National Security Reform (PNSR) asserts that the strategic environment of the 21st century and the *National Security Strategy* demand the establishment of an Integrated National Security Professional (INSP) system Complex problems require National Security Professionals (NSPs) who are trained and experienced to collaborate across interagency boundaries in both day-to-day operations and crisis response (PNSR 2010)

[14] The National Maritime Security Advisory Committee (NMSAC)—established under the authority of the MTSA—operates as a Federal Advisory Committee Act (FACA) within DHS/USCG, which is only part of the overall maritime security national system (MTSA 2002)

It is hard to galvanize public interest and concern for maritime security. The MS COI itself doesn't always understand the level of vulnerability or how fragile the nation's maritime infrastructure is. And it is difficult to grasp the complexity of the global supply chain and constant flow of imports and exports, which contributes to the challenge of sustaining public interest and awareness in maritime security issues. Therefore, a central leader should be established to elevate the visibility of the maritime security politically and "link maritime security as a public good to providing personal protection for the nation" (Interview ID: 021, Interview ID: 030).

### *Cultural Factors*

We must start with the meaning of words, because "interagency coordination" means different things to different organizations—each has its own cultural view (Interview ID: 034, Interview ID: 035).

"The interagency, general public, and politicians at all levels must recognize that America is a maritime nation." We are "victims of our own success in the maritime domain" because when commerce and trade moves, the public assumes MS is not being challenged. When interagency departments attempt to coordinate across government boundaries at the national level, there is "agency insecurity" due to control, budget, and cultural

pressures. Meanwhile, field commanders report success with coordination and sharing among local and regional agencies. In order to successfully coordinate across all maritime elements, there must be a budget-neutral process where everyone can get "credit" for MS successes—not just a whole-of-government, but "whole-of-maritime environment" approach (Interview ID: 021, Interview ID: 022, Interview ID: 023, Interview ID: 033).

Interagency organizations possess different cultural lenses through which they view maritime security challenges. National-level maritime security policy frames MDA in terms of safety, security, environmental, and economic variables, and needs to add "cultural factors" as part of collective action interagency coordination. At the national policy level, the interagency is handicapped by corporate cultures that fail to think in strategic and coordinated ways; and there is no national architecture for interagency players to overcome barriers to coordination—systems and mindsets are "not wired to share and coordinate." And, to complicate that challenge within the maritime domain, there is a deeply held culture of independence and free trade. Further, there is no official maritime Program of Record (POR) that allows for dedicated funding initiatives for programs such as Maritime Domain Awareness; and without formal funding mechanisms in place, maritime security programs

continue to be plagued by an ad hoc, disorganized approach (Interview ID: 004, Interview ID: 007, Interview ID: 014).

Government organizations are often unclear what the role of the interagency should be and are unsure how to potentially engage the private sector because there is no centralized coordinating mechanism. The global maritime commons are too ambiguous and ill-defined for the American public and Congress, and there is no clear linkage made to "the Homeland." Perhaps the maritime commons should be viewed as an "open system" managed like the worldwide web—a ubiquitous system driven by the public sector, which would at least work until a crisis occurs (Interview ID: 005, Interview 035).

Corporate cultures within the interagency are marked by different assumptions, attitudes, communications, problem-solving methods, and organizational terms which can impede collective action efforts. The key is building working relationships based on trust and reciprocity, especially when inviting new levels of participation from the private sector, academia, and international partners (Interview ID: 007, Interview ID: 015, Interview ID: 025).

Since 2001, interagency cultural barriers have been bridged by senior leadership forging consensus across multi-agency fora. For example, the relationship between USCG and TSA within DHS has matured significantly over the past 10 years because of an intermodal emphasis with maritime

security receiving an increased focus informed by national-level policy and legislation (i.e. NSMS, MTSA). And work groups such as the Intermodal Security Support Division (ISSD) within TSA has a charter to operationalize maritime policy with cross-governmental partners (Interview ID: 016).

Interagency coordination is often more art than science, and involves discovery learning with other agencies—presenting one organization to another and learning its professional language and value system—and being willing to "give more than you take" in a spirit of collective trust. Whole-of-government is a "growth area," and one must remember that relationships require ongoing engagement and education through formal and informal measures to establish that trust. Consider that it took over 20 years for Joint Interagency Task Force-South in Key West, Florida to reach its current interagency maturity (Interview ID: 018, Interview ID: 019, Interview ID: 028).

### *Policy Implementation*

"One of the primary obstacles in the maritime domain is a narrow mindset among interagency policymakers when defining maritime security; it needs to be understood and managed as a maritime system of systems" (Interview ID: 029).

"The interagency process is often the area where one can have the greatest effect on public governance and organizations—it's where the hard multi-agency work is done to achieve policy objectives." It is the key to achieving efficiencies within the security domain. If the goal is to operationalize policy in an environment of competing priorities, one must take a whole-of-government approach and forge consensus across agencies. The maritime security challenge is "so broad and ill-defined" it is hard to achieve any consensus among the MDA stakeholders. The best approach is to identify areas of collaboration where you can begin to achieve incremental compromises and catalyze common ownership. Within the maritime security COI, national-level leaders must cultivate working relationships and "empower agencies" to make decisions, but it "must happen at the national-level." Ultimately, the NSC and OMB must hold interagency leaders accountable for implementation of the NSMS (Interview ID: 015, Interview ID: 017, Interview ID: 018, Interview ID: 032).

The first question that must be answered is, "Who is in charge of maritime security?" Given that interagency coordination is the most significant challenge, some organization within the U.S. government must be given responsibility for implementation of maritime policies. From a systems approach, one must then "understand what the maritime security COI is trying

to coordinate." Currently, maritime security has a budget focus operationalized by agencies in a "defensive posture"—fearing the loss of agency funding and recognition. And agency participants must eventually believe it is in their best interest to coordinate across departments, and clearly understand what is expected of their organization—and be willing to act on those interests (Interview ID: 009).

The National MDA Plan (one of the eight supporting plans of the NSMS) is in need of revision in conjunction with re-validation of the broader NSMS itself. Further, national maritime strategies have been implemented in a fragmented and inconsistent manner, resulting in an uncoordinated proliferation of maritime initiatives within the DOD, DHS, and broader interagency. For example, the Interagency Investment Strategy (IAIS) which emerged after the NSMS in 2005 with over 100 action items has been reformatted within the maritime security COI; and while it identifies implementation requirements and policy gaps, the (renamed) Interagency Solutions Analysis (IASA) remains largely unexecuted six years after the President signed a major maritime policy (NSMS),(Interview ID: 004).

Senior level leadership must forge a consensus regarding the role of interagency players where maritime security impacts Homeland Security and Homeland Defense. Absent a September 11$^{th}$-type attack that might serve as a

forcing function to mobilize the maritime COI, there needs to be an approach based on Return on Investment (ROI). Within the interagency and Homeland Defense construct, there should be a Joint Capabilities Description Document (JCDD) which would be reviewed by the DOD Joint Requirements Oversight Council (JROC), establishing formal [maritime security] requirements, a Program of Record (POR), and Joint Program Office (JPO). These types of efforts will bring senior-level programmatic attention to an area currently lacking in emphasis and prioritization (Interview ID: 006).

Maritime policy implementation remains too heavily dependent upon key personalities within interagency organizations. More broadly, the strategies "exist in clouds" and are hard to translate for interagency players. After six years of interagency awareness of national maritime policy, there needs to be a concerted strategic communications effort to simplify maritime security and expand engagement within the interagency. It will be difficult to enlist the support of the general public if members within the interagency are not aware of critical maritime issues or do not fully subscribe to the policy (Interview ID: 014, Interview ID: 033).

The national leadership did its part by developing the NSMS as a general framework to inform the actions of interagency and regional leaders. Now each region must formulate regionalized SOP and CONOPS that reflect their

unique operational threats and requirements—allowing them the flexibility to implement elements of the strategy that apply to them. The national policy must be updated to address issues such as climate change implications in the Arctic and emerging piracy threats off the coasts of Africa (Interview ID: 025, Interview ID: 033).

Certain elements within DHS could have a major impact on maritime security by working more closely together. For example, TSA and USCG might leverage cross-agency efficiencies with programs such as the Trusted Traveler Program (TTP) and strengthen screening of passengers on cruise ships—and look for ways to economize existing programs: For example after TSA enrolls applicants for the TWIC program, they are handed off to be managed by the USCG (Interview ID: 018).

### *Maritime Security Structures*

"Fragmented policy and governance results in fragmented execution." The maritime transportation system requires systemic solutions to address security problems. For example, pulling 22 organizations into a new agency (DHS) has not improved maritime security policy implementation; maritime security organization structures need to be linked directly to maritime commerce and trade—the most critical economic infrastructure in the country.

Fundamentally, the interagency must recognize that the maritime transportation system is an interconnected and interdependent network. By establishing a national-level structure and maritime leader, one increases the probability of centralized decisions with coordination of maritime equities within a maritime system of systems, synchronized with requirements that directly impact economic trade, commerce, and shipping (Interview ID: 021).

The key—as with other strategic threats and vulnerabilities—is "national-level leadership" that provides a prioritized focus on maritime security and demands that operational requirements be well-defined. In an attempt to improve the governance of maritime security policy, steps are underway to consolidate various roles within the interagency, simplifying assigned responsibilities within the circle of policymakers and executive agents for MDA. The NSMS—primarily a preventive strategy—is an "initial framework" from which to build broader interagency capabilities. (Interview ID: 004, Interview ID: 005, Interview ID: 006, Interview ID: 035).

The current arrangement with the MARAD Administrator inside the DOT—a department with a heavy focus on aviation and highways—is ineffective. Establish an executive agent for all things "maritime" and place the MARAD leadership under that organization; or at the very least move MARAD to the DOC where there is—or should be—a focus on the "flow of trade." After

all, the economic statistics are clear: ships move the majority of commerce for this nation, and the global supply chain. "The maritime industry spends too much time in Washington playing agencies off against each other"—with EPA imposing things on one side and OSHA on the other (Interview ID: 021, Interview ID: 023).

Within the maritime COI, there is no defined chain-of-command; therefore, there is no unity-of-command in a domain that "needs hierarchical structures." Many different elements within the interagency "own a piece of maritime security, but there is no single coordinating authority"—a situation further aggravated by a personnel system with excessive rotation and lack of continuity. From a command-and-control viewpoint, no national authority has established a "supported—supporting" relationship where elements within the interagency know what the priorities are and who is responsible. For example, the NSMS stated that the USN and USCG would work together collectively to secure the maritime commons, but failed to define clear lines of responsibility, resulting in new (overlapping) layers of bureaucracy. Start by designating a national-level lead—an action that will serve as a catalyst to bring motivated maritime players together and forming the right structures (Interview ID: 008).

Since there is no single authority assigned as the "global synchronizer" or "executive agent" for maritime issues within the interagency that is responsible

for implementation of national policy, there continues to be fragmented symptoms of this broader shortfall, or lack of coordination. For example, when the Dubai Port World controversy surfaced in 2006 as a national security debate—due to the sale of port management businesses in six major U.S. seaports to a company based in the United Arab Emirates (UAE), and associated security concerns—it generated a firestorm of publicity because few people in national leadership (as well as the media and general public) understood the nature of the national maritime transportation *system*, nor could anyone explain effectively to the public or Congress the structures of port infrastructure ownership and management. There was—and still is—no single authority in charge of maritime security, setting the stage for continued confusion (Interview ID: 006, Interview ID: 008, Interview ID: 009, Interview ID: 014, Interview ID: 017, Interview ID: 021).

The maritime governance process (especially MOTR) is running well under the direction of the Global MOTR Coordination Center and Maritime Security-Interagency Planning Committee (MS-IPC) within the National Security Staff (NSS). The governance process is simpler in the (open-ocean) maritime transit zone than the (coastal) arrival zone because routine protocols are more likely; and authorities, capabilities, and interagency coordination are less complex. The MOTR process remains a prominent capability within the

interagency with potential for expanded application to maritime scenarios involving the Arctic region, piracy response, counternarcotics, transnational crime, counterterrorism, and cruise ship crime (Interview ID: 013).

Interagency cooperation "is more than just enhancing existing relationships within the government, but also requires establishing new relations within private industry, academia, and the international community." In fact, "interagency entrepreneurs must bring innovative solutions through non-traditional avenues;" for example, in some parts of the country, the National Guard Bureau (NGB) wants to be more involved in supporting maritime safety and security (Interview ID: 018).

Within the current Administration, the White House Council on Environmental Quality has formed the "Interagency Ocean Policy Task Force" under the National Ocean Council which offers a potential model to address maritime security interagency coordination because it brings together members from all elements of the maritime community—not just cross-governmental agencies—to develop a national plan. However, while it remains to be seen what it will produce, the initial concern is that it appears to be focused primarily on environmental factors rather than the constellation of safety, security, economic, developmental, and cultural issues of the broader maritime commons (Interview ID: 022).

### *Formal Coordinating Mechanisms*

We must first understand what we are trying to accomplish in the maritime commons and ensure we have unity-of-effort within the interagency. Sometimes there is such a focus on "building consensus" that tough decisions do not get made, or are not made in a timely manner. There needs to be someone in charge who can drive to the objective. While unity-of-command is essential for military systems, unity-of-effort is more appropriate in the 21st century threat environment when it comes to maritime threats, because interagency maritime authorities cannot "exercise command influence over the private sector, NGOs, or industry" (Interview ID: 025, Interview ID: 033).

A significant barrier to collective action is simply the lack of communicating mechanisms to overcome "bureaucratic vanity and egos" that impede interagency coordination. For example, the maritime transportation security system lacks an effective medium to consistently coordinate intelligence products and schedule maritime exercises. There is a need for a model that will facilitate building "coalitions of the willing" across the maritime domain. The Maritime Operational Threat Response (MOTR) process works well at the federal-interagency level, but needs to be much broader. There is an example in the Northwest region called the "Advisory Council Alaska"

(ACA) which includes participation from all elements of Alaska's multi-agency and multi-cultural community (Interview ID: 022).

Most interagency inefficiencies are based on agencies' failure to understand the lanes and roles of adjacent agencies. One department fails to communicate with another and therefore, is unaware of a problem or available resources. Cartography is a useful metaphor—mapping the roles, lanes, authorities and overlapping areas—because agencies engage in discovery learning as they navigate the terrain, and need to periodically remap their area of operation. But, there must be a single coordinator that can look across the lanes and "direct traffic." Ideally, that role is filled by the NSC, but perhaps "it did its part by developing the NSMS, and now there needs to be an agency in charge of execution"—that assembles all key players around the table; or perhaps there could be a dedicated directorate of maritime security at the NSC, or a stand-alone coordinating office (similar to ONDCP for drug control policy), but some interagency element must to be responsible for collective action, and cross-regional maritime issues (Interview ID: 024).

While the majority of maritime cases are "routine" in nature, it is still essential to clarify lead federal agencies, lines of authority, and jurisdiction factors as early as possible in the case. The MOTR process—established by the NSMS in 2005—represents a major improvement in cross-governmental

coordination and serves as a model to establish open lines of communication for multi-agency maritime cases; yet it is too dependent upon "personalities" and needs to be more formalized with an institutional focus. Some operations centers within the interagency lack standardized training programs to support MOTR; yet the overwhelming view of maritime security experts inside the interagency is that MOTR is an excellent notification, information-sharing, collaborative tool. But, the MOTR coordinating group only has federal interagency membership—and the maritime security transportation system is far more than just the federal government. It also includes NGOs, private industry, state, local, tribal, and international actors whose voices must somehow be included (Interview ID: 003, Interview ID: 022).

The MOTR process successfully integrated DOD into the maritime coordination process as a "full interagency partner" and expanded the evaluation of maritime threats, increasing the level of coordination when there are competing agency interests. Some observe that the maritime commons are an easier environment to resolve competing interests because "nobody technically owns the space." Cases such as MAERSK ALABAMA have garnered interagency support for and increased confidence in the interagency MOTR process. As a coordinating mechanism, MOTR represents a transformational capability in that there is broad support for "using MOTR for everything..." yet

there is still resistance among government agencies to being designated Lead Federal Agency (LFA) during a MOTR conference call (Interview ID: 013, Interview ID: 017).

One of the limitations of the MOTR process is that it brings interagency players together "for a single maritime incident," but does not address the normative coordination challenges in a "non-MOTR day-to-day working environment" within cross-governmental agencies (Interview ID: 014). Further, there have been challenges using the MOTR process to address "detainee disposition," especially in response to piracy cases off the Horn of Africa (Interview ID: 017).

The maritime industry is often resistant to regulations and coordination because it is harder to manage movements and control activity across the global maritime commons, especially given the market sensitivities and proprietary factors within the maritime shipping industry. Unlike the land and aviation environments, the maritime domain often lacks clear lines of authority and controlling mechanisms—or in some cases has overlapping and conflicting authorities—especially when a ship is operating in the open maritime regions. Some ask, "How can we do anomaly detection in the maritime domain when it is a system where anomalous behavior is the norm?" (Interview ID: 004).

The MS policy process is fragmented—similar to counterterrorism—because there is no defined "interagency process" for crisis response. The interagency process, by nature, is driven by ongoing and changing "vital national interests," so the maritime domain is an example where the process will normally tend to appear uncoordinated. The best approach may be to formalize a new Maritime Community of Interest (COI) which can operationalize the "ligaments of the interagency process" and build a higher level of trust and confidence among agency stakeholders (Interview ID: 005).

The NSMS lacks the power to collaborate across multi-agency boundaries because there is no active coordinating mechanism. Ten years after the September 11$^{th}$ attacks, the U.S. Navy indicates there are over 800 MDA efforts underway worldwide, and over 400 MDA initiatives being funded within the U.S.—a reflection of unclear authorities, lack of coordination, and failure to set priorities. Therefore, in the absence of clear direction or a single authority guiding the process, agencies, industry, and departments move forward and "do something with the funds they have available" (Interview ID: 008).

One of the reasons interagency coordination is such a challenge is because of the complexity across multi-agency networks and the tempo of operations—which underscores the need to formalize the interagency process. For example, DHS is considering establishing a Joint Program Office (JPO) to

forge consensus, better align resources, and develop operational requirements for cross-domain strategic planning, and coordination across cylinders of excellence (Interview ID: 012).

An overwhelming challenge within the interagency is the small vessel security threat (commercial ships under 300 gross tons, coastal freighters, and recreational vessels) which can only be addressed through robust multi-agency coordination and a resilient combination of intelligence coordination, information sharing, and creative application of technology (Interview ID: 025).

### *Private Sector Role*

Interagency coordination is the first priority in any effort to incorporate the private sector in cross-governmental policy planning and execution. The relationship would be more of a partnership of "mutual respect" if the government reduced administrative and regulatory burdens on the commercial maritime industry. Because the DHS and USCG were heavily resourced and funded after the September 11 attacks, they seemed to place increased attention on homeland targets which they control—the lower risk domestic industry rather than the (more difficult to regulate) offshore foreign fleet—and imposed heavy regulations. Since 2001, the USCG has lost ground in its relationship with the private industry because of the way certain regulations—such as the

Notice of Arrival (NOA) and Transportation Worker Identification Credential (TWIC)—were implemented. There is a perceived bias for "form over substance" in pursuit of national security measures. Further, the rule-making process is flawed when it becomes a "barrier to entry" for employees and employers in the private sector (Interview ID: 027).

The commercial maritime industry "is good at managing risk and threat analyses because their livelihood depends on protecting the critical maritime infrastructure." So, public-private partnerships should be leveraged to advance maritime security collective action and it's the National Security Council's role to "strengthen industry participation through the interagency" (Interview ID: 015).

Parts of the commercial maritime industry attempt to get more involved in maritime security policy formulation and execution, but too often the government is not receptive. Conferences are insufficient vehicles to integrate private sector participation; and national and regional working groups and committees are "too administrative." There needs to be an active training exercise program that includes private sector participation; and industry is willing to invest time and resources for effective exercises. Since September 11th, 2001, the Coast Guard has a weaker relationship with the commercial maritime industry because of a strategic shift in focus from regulatory

partnerships and safety to law enforcement and counterterrorism within the Marine Safety program (Interview ID: 021, Interview ID: 023, Interview ID: 031).

The challenge of including the private industry in maritime security is similar to struggles in the cyber domain. Cyber is an area where the private industry owns 85% of the infrastructure, and the government has not determined the best way to coordinate with industry. Similarly, the USG is shaping anti-piracy policy within the interagency—to help protect shipping companies from pirates off the Horn of Africa—and has not effectively "engaged the maritime industry" (Interview ID: 024, Interview ID: 034).

The leadership needed from within federal agencies is also lacking. From private industry's perspective, the established organization to facilitate public-private interface is the DOT's Maritime Administration (MARAD), yet there is currently "no voice due to lack of empowered leadership and coordination," which means that industry's participation is largely absent from maritime security planning. Consequently, the maritime security strategy developed by the NSC at the national level is a naval-centric policy (NSMS 2005). Yet, the primary investor and presence in the maritime commons is private industry—including port pilots, commercial fishermen, and recreational boaters—yet the policies are driven by naval elements within the federal government (DOD/USN, DHS/USCG/CBP). Further, the commercial maritime industry is

often incapable—even dysfunctional—when it comes to providing input to the interagency policy process, and therefore, too often defers to the actions of the government, which further compounds the problem (Interview ID: 021, Interview ID: 023).

Before the NSMS (2005) and the MOTR process, the State Department "stretched the limits of interagency coordination" through Presidential Directive-27 (PD-27), and many high-visibility maritime cases were handled successfully because the interagency effectively coordinated with interagency players, but also with international partners and the private industry (e.g. owner of the vessel), on a case-by-case basis. There must be a mechanism in place to serve as a catalyst to two-way communications between government and commercial maritime representatives. For example, within TSA, there is a Government Coordination Council (GCC) and the Sector Coordinating Council (SCC) to focus attention upon the security and resilience of national-level critical infrastructures and key resources (CIKR). So, it may be more efficient to "leverage *existing* forums to identify maritime issues and begin to partner with industry in small ways and build from their—giving the private sector a voice in maritime policy initiatives" (Interview ID: 016).

Many in industry feel that communications are largely one-sided—the maritime industry provides large amounts of required information to the

government (USCG, CBP, etc.), but very little comes back to them. There needs to be a stronger outreach and education process with the private sector, because "they often do not know what information to report or how to report it." The "see-something, say-something" program initiated by DHS is a good start. The communications challenge is being addressed by Coast Guard Captains of the Port (COTP) through the Area Maritime Security Committees (AMSC) by focusing on public concerns at the local level. Private sector input is also provided to regulators through the National Maritime Security Advisory Committee (NMSAC) to ensure the maritime industry has access to the Coast Guard. However, at a certain point during the rule-making process, the interagency is prohibited from engaging the private sector—limiting communications with private stakeholders at (what could be) a critical juncture in the policy formulation process. For example, while updating the Maritime Transportation Security Act (MTSA) the private sector was shut off from the process—which the maritime industry views as a serious weakness in the public-private relationship (Interview ID: 016, Interview ID: 020, Interview ID: 031).

There is widespread consensus that the bulk of the capacity, experience, and opportunities in maritime security resides within the private sector—all levels of the commercial maritime industry—yet there is a lack of

understanding, established mechanisms, and interagency channels to consistently exchange information and leverage private participation. While the maritime industry has a vested interest in supporting maritime security as a public good—because of potential disruptions to commerce—the interagency has not determined how to effectively engage industry, thereby "missing the opportunity for a meaningful partnership." The current public-private relationship is currently a "compliance model" based on regulatory regimes, rather than a constructive "collaborative approach." This theme represents a major "capability gap" because the interagency appears heavy on bureaucratic policies and light on two-way information sharing. Meanwhile, the commercial industry focuses on commercial trade—avoiding disruptions to the supply chain—lacking incentives to participate in the interagency policy process. The interagency-industry (public-private) relationship should be one of "shared ownership" for maritime security challenges (Interview ID: 001, Interview ID: 002, Interview ID: 004).

The motivating factor for the private sector is financial profits, so maritime security policymakers must incentivize the maritime industry by showing it is more cost-effective to participate in the maritime security planning process than to be uninvolved. Otherwise, all stakeholders will define maritime security through their own lens. For example, the Navy will see it as

the global maritime commons and Sea Lanes of Communication (SLOCs), while the Coast Guard will focus on safety and law enforcement on waters inside the 200-mile Exclusive Economic Zone (EEZ) where they have authority and jurisdiction. Likewise, the private sector must understand and support maritime security is a public good "that deserves special attention" not only inside their global commerce world, but also within the interagency policy process (Interview ID: 009).

The interagency is uniquely positioned to strengthen implementation of the NSMS and operationalize the supporting plans to encourage the increased role of industry. Building on a foundation of communications, training, and operational exercises, the interagency should anticipate a future maritime crisis and work from the bottom-up, integrating the commercial industry's Facility Security Officers (FSOs) and Company Security Officers (CSOs) into the planning process (Interview ID: 010).

Merchant mariners serve as "eyes and ears" on the water—a maritime citizens' watch—because they know what activities are taking place in the maritime environment, and should be considered "trusted agents" who can contribute to broader maritime security situational awareness. Many, especially outside government, consider interagency intelligence data to be "overclassified" so that much of the valuable information that could be made

available to the maritime industry is held behind security barriers. Merchant seamen are potential sources of critical maritime security information, and they should be viewed as valuable contacts for information sharing (Interview ID: 014).

And there are many opportunities for private sector outreach. For example, at European Command (EUCOM), DOD is establishing a public-private partnership involving DHS/CBP elements, focused on "coincidence of purpose"—mapping the intersection of collective equities, including import/export requirements, cargo inspection standards, security protocols, and maritime security (Interview ID: 019).

### *Intelligence Cooperation*

The maritime transportation system our nation depends upon so heavily for economic survival requires improved resilience—such that it will "degrade gracefully and recover rapidly." Rather than focusing primarily upon risk assessments to predict geographic nodes that could be attacked by terrorists, the focus of maritime security planning should be on building a "resilient system of systems" that can recover quickly from any disruption. Hurricane Katrina and the attacks of September 11$^{th}$, 2001 taught emergency planners that there are too many vulnerabilities in the homeland infrastructure to expect

intelligence analysts to prevent an attack or interruption. A systems-based approach matches the reality of maritime commerce—which is a system of systems—and places the focus on resilience and resumption of economic trade. As with the ports of Los Angeles/Long Beach, and other maritime "choke points" around the country, it only takes a few [terrorists] to shut down port operations, but it takes hundreds [across the local security community] to reopen the port; therefore the focus should be on the rapid recovery of maritime commerce. Don't discontinue intelligence analysis, anomaly detection, and "prevention" efforts to support maritime security, but focus primarily on developing capabilities and capacities that enable improved resilience (Interview ID: 021, Interview ID: 029, Interview ID: 030, Interview ID: 031, Interview 034).

A fixation on "better intelligence to prevent an attack" is not a viable approach, because there are too many ways that the maritime transportation system can be disrupted. The best defense against nefarious actors in the maritime domain is the knowledge (on both sides) that if something bad happens, it will not have a long-term negative impact—a resiliency focus versus depending solely on intelligence and security. For example, the Congress mandated 100-percent scanning of containers, which is unrealistic. Perfect security comes at too high of a financial cost; so the answer in that example is

risk-based scanning of cargo and containers (Interview ID: 021, Interview ID: 029, Interview ID: 034).

Given the range of viewpoints among the 16 agencies of the Intelligence Community (IC), there must be a "fully coordinated formal maritime threat assessment, otherwise the debate over maritime threats will persist indefinitely and preclude a definitive interagency position on the nature of the maritime security risk." Right now—in the maritime domain—there is often more intelligence available than there are operational assets to respond to the actionable intelligence (Interview ID: 015, Interview ID: 026).

The IC has improved in sharing intelligence information since 2001, and is "far more open and cooperative" within the maritime COI. Intelligence institutions such as ODNI, NCTC, DIA, CIA, FBI, and CBP were cited as organizations—while resource challenged—that are increasingly aware of the importance of maritime security threats. A primary focus within the DHS as well as the science and technology community is on "small vessel" targets (vessels under 300 gross tons not required by IMO to transmit an AIS position report while underway), and "dark targets" that are difficult to detect, whether cooperative or non-cooperative in nature (Interview ID: 003).

We can do much better with intelligence by establishing a "maritime citizen's watch," leveraging the expertise of the maritime industry and

merchant seamen who live and work in the maritime commons. And those efforts would generate more information, which could then be distributed more openly to state and local maritime law enforcement officials. The key is increased transparency, which in turn encourages self-correcting behavior among maritime actors (Interview ID: 004, Interview ID: 031).

Interoperable and automated fusion analysis in a cross-domain architecture is needed to support development of a maritime COP and user-defined operational picture (UDOP)—a holistic system to support all technologies and rule sets—providing senior decision makers with more timely actionable intelligence. The volume of intelligence data, lack of automation, and fragmented systems impede effective intelligence analysis in the maritime domain. The response to September 11 within the maritime domain was heavy handed—similar to the aviation response—with a nationwide closure of all ports, stopping the maritime flow of economic goods and commerce. There needs to be a more resilient, localized response to future security threats or actual events—allowing for limited closures and enabling more rapid recovery (Interview ID: 006, Interview ID: 014).

There needs to be an empowered integrator assigned to fuse all maritime intelligence at the national level, but this remains a problem because there is no single authority in charge of broader maritime issues; consequently

maritime intelligence issues are often left to be handled by lower-tier elements of the interagency. This raises the issue of unity-of-command within the maritime security COI and reluctance on the part of national-level leadership to designate some organization within the interagency as the "global synchronizer" for maritime roles and responsibilities. Until there is a single executive agent designated for implementation of the NSMS and all relevant maritime responsibilities, maritime intelligence will experience the same uncoordinated consequences as other parts of the maritime security system (Interview ID: 017).

There are some encouraging efforts within the IC to create a "pooled information environment" and enable processing large volumes of high-speed transactions in an automated and continuous manner. One such initiative is the Intelligence Integrated Prototype Architecture (I2A) which leverages current technology and available intelligence to provide improved information to analysts and operational planners. The challenges are significant—for example, how does one engage international partners in building "collective security" in order to prevent a catastrophic local event that could have global impact? How does the IC share information with the maritime industry or coalition partners while protecting sources and methods used to obtain the raw intelligence? (Interview ID: 028)

In the area of "data governance," intelligence cooperation includes the challenges of security classification, privacy issues, information assurance, and identity management. There is a need for structures that control the information, yet afford the "freedom to share data with those whom you need to share" (Interview ID: 012, Interview ID: 013, Interview ID: 014).

### *Budget Factors*

"Common public goods (i.e. maritime security) have no resource sponsor." Since maritime requirements seldom appear as a specific line item on any agency's budget, organizations tend to stay in their "swim lane." In the Washington, D.C. budget environment, that means agencies "only do that which they are funded for." For example, while the Department of Commerce (DOC) has equities that intersect with fisheries, maritime commerce, and the global supply chain, DOC may not officially be willing to contribute to interagency maritime security efforts. In the absence of a broad consensus or external coercion, departments are "driven by self-interested budget realities." Within the interagency (DHS, DOD, DOC, etc.) there is often programmatic "fear" of impacting the flow of current (and out year) budgets; because the USG operates on a performance-based system which often places the uncertainties

of the maritime environment on equally uncertain funding ground (Interview ID: 028).

Organizational silos are difficult to penetrate when introducing a new level of interagency cooperation, because any innovator encounters a legacy planning, programing, and budget process that drives departments' willingness to engage. Despite the improvements in coordination since events of September 11, 2001, agencies still view one another as "budget competitors," especially if located within the same Department (e.g. USCG, CBP, and ICE within DHS). Too often, the interagency focus is defense-centric because "DOD has the resources," which doesn't always enable unity-of-effort among the interagency when it comes to maritime security; but in fairness to DOD, there are significant inefficiencies that plague the Title 14 (U.S. Code) law enforcement organizations within the broader interagency. For example, within New York harbor alone there are some 14 different law enforcement agencies competing for maritime resources. At the national level, among agencies, there is a tendency to deflect "ownership" for a maritime case—rather than assert proactive leadership—because of resource requirements that may be unwittingly levied upon an agency when they step forward (Interview ID: 003, Interview ID: 014).

The current uncoordinated planning approach—exacerbated by lack of funding structures and a maritime program of record—will continue this way until the NSC and OMB exercise stronger leadership. As long as MDA has no government "resource sponsor" to champion maritime initiatives, MDA priorities will suffer in the annual federal budget process (Interview ID: 004, Interview ID: 006).

Normal budgetary pressures within the interagency underscore that no agency can operate independently, and therefore, must leverage the efficiencies of collective action and coordination. In some cases, agencies have assigned staff to liaison positions within the interagency to ensure they are coordinating effectively with other organizations. Improvements are also being made to decentralize communications and formalize the interagency process, including measures such as the Integrated Data Environment (IDE) which attempts to standardize work flow activities (Interview ID: 012).

### *Information Sharing*

The interagency has made progress with information-sharing since September 11th, 2001, but nationally, "we have not gone far enough fast enough." As emphasized in the 9-11 Commission Report, the interagency needs to share [the right] information to those with mission needs while protecting sources

and methods. There is a continuum with "coordination" at the low end that includes deconflicting and information sharing; then "collaboration" in the middle which includes joint and combined operations; and at the high end is "integration" which is the gold standard involving seamless unity-of-effort (Interview ID: 034).

There needs to be a more a formal process that enables the timely sharing of information at appropriate levels of the maritime community. "Too often information-sharing with the commercial industry goes against the government's DNA, yet the private sector currently provides the interagency with large amounts of information regarding vessels, crewmembers, and cargo; yet only receives a small amount of information in return." It would be helpful to at least share information concerning general trends—in alien migration, human smuggling, and counternarcotics flow—because "information is power and the commercial maritime industry would respond favorably to this increased level of trust" (Interview ID: 020, Interview ID: 021).

Legacy data-management systems within the law enforcement community are partially automated, but 40-year old systems are still employed within pockets of the interagency. There are few standardized collaborative tools to enable broad-based information-sharing across the maritime security COI. And there is no integrated Common Operating Picture (COP) that fuses

information and provides widespread access for coordinated decision-making across the interagency. The maritime community needs a centralized node to conduct strategic operational planning, similar to the role the National Counterterrorism Center (NCTC) plays for Homeland Defense. Without these types of capabilities, the NSMS will have "no teeth" (Interview ID: 006, Interview ID: 007, Interview ID: 028).

Since no single country, person, or technology can achieve the necessary level of engagement, interagency and international partners must share information by establishing systems that build trust. There is a need for cross-domain tools that operate across multiple-security levels with data-tagging verification that ensure accountability within a supported—supporting construct (Interview ID: 008, Interview ID: 030).

The maritime challenge "is not just about security, but is also an economic issue." Interagency planners do not emphasize the private sector enough and need to seek more exchange of information—engaging the maritime industry as "an equal partner, as early as possible in the planning process." There is currently "excellent information-sharing taking place on anti-piracy, but maritime security involves more than piracy." Yet, there needs to be a collective planning effort at the national policy level to anticipate potential maritime security events and ensure proper recovery plans are in

place, because we will never have perfect security. Working through existing groups such as the Industry Advisory Committee (IAC), expanded information-sharing could start with the interagency identifying areas where more information can immediately be released to the maritime industry; and the private sector could in-turn identify avenues to expand information-sharing with the interagency. Government-industry trust levels are healthy in the antipiracy area because of challenges off Western Africa, so "at least there is a foundation to build upon" (Interview ID: 010, Interview ID: 011, Interview ID: 017).

Right now there is a "stalemate" with both sides (public and private) withholding collective sharing opportunities. If the interagency could start the process by expanding the level of information-sharing, the commercial maritime industry might see the gesture, experience the benefit of more exchanges, and return the favor. But the U.S. government must first bridge the existing information-sharing gap and start the collaborative process by overcoming structural barriers to sharing (security classification, etc.) and find ways to incentivize the private sector. The maritime industry has tried to create information-sharing forums, but it needs help because they are very fragmented and also lack institutional coordinating mechanisms. The interagency must drive this initiative, viewing information-sharing as part of

the broader maritime security public good (Interview ID: 010, Interview ID: 011).

Agencies normally have "good reasons" for not sharing data, but there is a tendency to overprotect their information. There needs to be stronger interagency focus on data-sharing incentives. Intelligence data are hard to share (i.e. maritime tracks), so organizations such as DHS/USCG should identify what is easiest to share and establish an agency among agencies that can lead the effort. For the private industry to expand its information-sharing, it must be mandated through regulation or incentivized by a positive return on investment (ROI). Fundamentally, the information-sharing challenge must be met by a combination of technology—which requires appropriated resources—and supporting policy (Interview ID: 030).

### *International Collaboration*

Expanding the role of international partners starts by building trust and identifying areas of mutual interest. For many developing nations, there is great value in partnering with non-governmental organizations (NGOs) that are already in-country and reinforcing their efforts through the embassy country teams—offering security assistance to the host nation through simple coordination efforts. It takes small gestures of support and cooperation to

build a long-term meaningful relationship. For most Combatant Commanders (COCOMs), all engagement efforts—namely Build Partner Capacity (BPC) and Theater Security Cooperation (TSC)—must be low-cost, low-maintenance, low-technology, and non-classified in order to have any degree of utility and sustainability. For example, at Africa Command (AFRICOM), the ability to move forward with the Africa Partnership Station (APS) required declassification of some information, and strong partnerships with the interagency, especially DOS (Interview ID: 017, Interview ID: 014, Interview ID: 18, Interview ID: 19).

Some countries the U.S. attempts to engage through the interagency are critical to achieving collective security within the maritime commons, because any threat—especially within a globalized supply chain—has a potential nexus to the U.S. Homeland. But, cultural factors and training/exercise experience (working with America) can raise suspicion, among international partner nations—concerns about militarization, counter-intelligence, and simply "trusting U.S. motives." This barrier to collective action can often be ameliorated by active interagency coordination and outreach through DOS/USAID/NGOs supporting common goals with the host-nation. Interagency unity-of-effort and coordination is a critical element across

governmental agencies, "because DOD can overwhelm a host country with their resources" (Interview ID: 017).

The interagency must ensure "its own house is in order" regarding cooperation and information-sharing before expecting coalition partners to engage openly. Global maritime security efforts have also been effectively managed through the International Maritime Organization (IMO): publishing best-practices for antipiracy operations and providing trend analyses of piracy activity. And in some countries, partner nations are ready to engage while others will need significant groundwork done by the interagency before they are ready. For example the King of Morocco officially mandated interagency cooperation within their national government; but it will take broader efforts by bodies such as IMO to internationalize maritime security standards beyond individual countries[15] (Interview ID: 017, Interview ID: 034, Interview ID: 035).

### *Academic Participation*

There is significant interest in the maritime commons, but until there is a "pool of maritime information" available to the academic community of

[15] For example, after the terrorist attacks of 2001, IMO took steps to increase its focus on maritime security, including the introduction of a comprehensive security regime for international shipping involving over 180 countries—the International Ship and Port Facility Security (ISPS) Code, implemented in 2004 under the UN's International Convention for the Safety of Life at Sea (SOLAS).

researchers, "the [maritime] algorithm will remain undeveloped" (Interview ID: 028).

There needs to be a body of literature and academic research on the subject of maritime security to inform the public policy process. DHS has invested millions of dollars to stimulate academic centers of excellence across the country, including those focused on maritime security. Academia is currently not influencing maritime security policy as much as it should. For example, maritime security policy lacks the momentum that could be provided by the military academies (Naval, Coast Guard, and Merchant Marine), which is linked to the related problem of missing national-level empowered political leadership in the maritime COI (Interview ID: 029, Interview ID: 018).

Academic institutions have been underutilized in addressing national-level maritime issues and need to be actively leveraged through research grants, professional conferences, and centers of excellence, because they have the ability to offer research and study about the nature of the collective action problems, applicable theories, and effective role of the interagency. In government agencies, there is natural separation in roles and missions; and academic institutions can help bridge gaps in interagency coordination through seminars, conferences, lectures, post-graduate studies, and cultivating a new generation of leaders (Interview ID: 001, Interview ID: 019).

Providing funds to academic institutions without a formal plan is not productive, and academia is often too detached from the operating agencies to be effective, so "thought leadership" should come from centers of excellence "inside the interagency." Collective action represents one of the theoretical frameworks to better inform interagency cooperation in the maritime commons, but does not inform the government *how* to get organizations involved. Further, the Congress and interagency are often reluctant to use academic findings "because they doubt whether academics understand" the real issues facing the government (Interview ID: 030).

The following table (5.5) provides a graphic summary of the 12 major findings that emerge from the expert interviews, including a brief description of the themes that are linked to the research hypotheses under examination. Those hypotheses listed in the right column of the table are supported by the corresponding outcomes on the left column—showing a strong positive correlation between the hypotheses and the empirical results of the interviews.

Table 5.5
*Linkage of Interviews to Hypotheses*

| Themes from Interviews (Supporting no. of interviews) | Link to Hypotheses |
|---|---|
| **Maritime Transportation System**<br>Interconnected global supply chain; NSMS is a starting point and model to build on; Assign a single global synchronizer or executive agent; Manage as a system of systems (10) | H1, H2, H3, H5, H6 |
| **Leadership and Understanding**<br>Need empowered visionary political leadership and cadre of MS professionals to assert economic development and growth; Establish Federal Advisory Committees (FAC) (5) | H1, H2, H3, H4, H6, H12 |
| **Cultural Factors**<br>US is a maritime nation; need to foster whole-of-maritime environment ethos; link maritime commons to Homeland; coordination requires relationships of trust and reciprocity (13) | H1, H2, H3, H4, H5, H6, H12 |
| **Policy Implementation**<br>Currently fragmented because nobody is in charge; NSC must assign responsibility and hold interagency accountable for NSMS execution; build consensus within the interagency (9) | H2, H3, H4, H5, H6, H7, H10, H12 |
| **Maritime Security Structures**<br>The maritime transportation system is an interdependent network with no single authority in charge to define operational requirements or set priorities; MARAD's role is unclear (11) | H1, H3, H5, H6, H9, H11, H12 |
| **Formal Coordinating Mechanisms**<br>The NSMS lacks coordinating power because there is no dedicated mechanism or coordinator to direct actions; MOTR is a good start, but must go beyond federal agencies only (12) | H1, H2, H3, H4, H5, H6, H7, H8, H9, H10, H11, H12 |
| **Private Sector Role**<br>NSMS is a naval-centric policy, lacking outreach to private sector; currently a "compliance" vs. "collaborative" model; NSC, DOC, & MARAD need stronger outreach programs with industry (16) | H1, H3, H6, H10, H11, H12 |
| **Intelligence Cooperation**<br>Need a national priority to coordinate maritime intelligence; build resilient system to achieve rapid recovery vs. perfect security; goal is pooled info-environment with data controls (15) | H1, H2, H3, H4, H6, H7, H9, H10, H11, H12 |
| **Budget Factors**<br>Budget pressures drive agency participation at all levels; lack of maritime POR impedes funding efforts; no resource sponsor results in fragmented and uncoordinated budget plans (6) | H1, H3, H4, H5, H6, H7, H12 |
| **Information Sharing**<br>USG must close information-sharing gaps and incentivize others—private sector and interagency—to share via a | H1, H2, H3, H4, H6, H7, H9, H10, H11, H12 |

| | |
|---|---|
| combination of policy and technology improvements (11) | |
| **International Collaboration**<br>Interagency unity-of-effort critical to synchronize engagement efforts; start by building trust and mutual interest; collective security imperatives require partnership with some nations (5) | H1, H2, H3, H4, H5, H6, H8, H11 |
| **Academic Participation**<br>Academic institutions are under-represented in the maritime discussion; they are a potential source of literature, research, seminars, relevant theories, and thought leaders (6) | H2, H3, H6, H9, H12 |

Table 5.5 (cont'd)
*Linkage of Interviews to Hypotheses*

# CHAPTER 6

# CONCLUSION AND DISCUSSION

## Major Findings and Implications of Research

This section focuses upon the most significant findings from the maritime case studies, review of relevant documents, and interview of subject matter experts—and offers suggested remedies based on these findings. The research findings fall in several broad categories that point to the need for greater interagency coordination and opportunities for expanded research relative to collective action theory, cross-governmental variables, and maritime security resilience. The outcomes of research questions and correlation to collective choices underscore the need to significantly expand the connectivity and coordination among, within, and across U.S. government agencies, departments, and military elements at federal, state, regional, and local levels (Wilson 1989, Raach & Kaas 1995, Donley 2005), and identify existing gaps in key maritime security areas, such as international collaboration, information sharing, intelligence cooperation, and expanded participation by the commercial maritime industry in the policy process.

Based on previous maritime studies and the review of available literature, certain maritime themes emerged which provide the foundation for further

examination—predictors and explanatory variables for subsequent case studies and interviews. These themes were investigated for their causal influence upon, as well as potential solutions for, improving interagency coordination in support of maritime security—by testing against the list of research hypotheses. These themes represented potential linkages of maritime security strategic imperatives, theoretical principles, case study selections, and operationalizing questions. Further, they were evaluated as sources of collective action "friction"—factors that could detract from maritime security interagency coordination through elements such as tragedy of the commons, free-riders, prisoner's dilemma, transaction costs, conformity costs, public goods, focal points, and externalities.

The following ten maritime security themes and propositions summarize the starting point of this study, helping shape initial research questions and hypotheses for the examination of improved maritime security resilience (Appendix A):

- Interagency Coordination—Expand the level of coordination within the U.S. government departments, agencies, and organizations to close gaps that could be exploited by nefarious elements (Wilson 1989, Raach & Kaas 1995, Donley 2005, NRC 2008).

- International collaboration—Build a global maritime information exchange system to expand international engagement and foreign disclosure authorities (Haas 1980, Carafano & Weitz 2007, NRC 2008).

- Private industry participation—Provide a framework and process for commercial maritime industry participation with government to improve policy enforcement, and appropriate the role of the private sector (U.S. GAO 2005, Frittelli 2008).

- Information sharing—Open lines of communication and close barriers based upon data controls, system certification and authentication, privacy and security classification concerns (Relyea 2004, U.S. GAO 2005, U.S. GAO 2006, NRC 2008, Frittelli 2008).

- Strategy implementation—Clarify lines of responsibility within the maritime security COI and operationalize the specific tasks contained in the NSMS eight supporting plans (Brooks 1986, Till 1994, NSMS 2005).

- Integrate maritime systems—Develop an integrated and automated Service Oriented Architecture (SOA) to fuse data bases and technology systems which leverage best practices across intelligence and information providers (Panayides 2006, Ince, Topuz, Panayirci, & Isik 2000).

- Intelligence cooperation—Optimize intelligence collaboration and dissemination to improve notification and warning indicators as well as detection and monitoring (Betts 1978, Hughes-Wilson 1999, Donley 2005).

- Governance organization—Establish a single global synchronizer or executive agent within the U.S. government who is responsible for maintaining and executing the strategy (Freidrich and Mason 1940, Miyakawa 2000, NSMS 2005, NRC 2008).

- Cross-domain solutions—Expand capability of moving information among security classification levels to minimize over-classification and maximize flow of information (Davis 1952, Kaiser 1989, Hubbard 2005).

- Concepts of operations—Synchronize operational planning, standard operating procedures, and rule sets across joint, interagency, coalition organizations (Goertz 2005, OPNAV 2007, USCG 2007, NRC 2008).

It is important to recognize that this initial roadmap of expected themes and propositions are operationalized within a complex interagency environment of people and politics, and there is an indispensable role played by *human* relationships. Although not listed as its own maritime security theme, *people* variables emerge as an important factor imbedded within all ten interagency factors because successful public and private programs are accomplished by trained and qualified professionals (Downs 1967, Becker 1978, Axelrod 1984, Donley 2005, Hunt 2005)

The findings discussed below—examination of collective action themes and case study category comparisons—help determine under what conditions and factors interagency coordination in support of maritime security is most likely to occur or not occur; and also add to the understanding of how collective choice mechanisms might enhance or detract from interagency policy problems.

### *Collective Action Theory Missing Elements*

The above themes represent the initial expectations (Appendix A)—a starting point to frame the problem definition and help operationalize research questions and hypotheses. As demonstrated in the earlier chapters, those propositions informed the basic assumptions and were evaluated against

empirical research findings. These findings also provide a strong test bed for all the research hypotheses (H1-H12) by allowing critical comparisons of variables within the theoretical framework and cross-agency fora. More specifically, the linkage of interview findings and interagency themes to the hypotheses in Table 5.5 shows how this assessment supports testing of all the research hypotheses.

To summarize, the intersection of collective action (CA) theory and interagency cooperation (IC) yielded a list of 12 overlapping themes—complementary and shared concepts—which reflected "multiple perspectives" (Sabatier 2007) and enabled a comparative approach that informed research questions and hypotheses: transparency, rationality, reciprocity, cooperation, communications, culture, investments, research, field experience, trust, institutions, and policy implications (Table 3.1).

Building on this comparative approach, there were 18 operational themes that emerged from the maritime case studies (Table 5.4), which were integrated into the 12 major strategic categories derived from the expert interviews. Since the research questions and the hypotheses were informed by the theoretical framework of collective action and principles of interagency cooperation, the 12 major themes—that emerged from this empirical qualitative study—were compared to the previous list of overlapping CA/IA

themes, comparing the "theoretical framework" themes (Table 3.1) to "research finding" themes (Table 5.5). And the cross-referencing of those two lists provided one of the major findings of this research, showing how collective action theory—represented by the 12 themes in Table 3.1—aligns with the CA/IA themes captured by the 12 themes in Table 5.5.

By comparing the primary outcomes of both efforts (literature reviews and empirical research), the two lists suggest that collective action—as a growing theoretical framework—has high utility as a theoretic framework to inform the public policy process within the interagency environment and support maritime security research. Further, as reflected in Table 6.1, nine (9) of twelve (12) themes align with the principles of collective action theory while there are three missing elements—or at least new areas suggested for future research—or potential gaps that could be closed in future studies of CA theory: (1) Systems Approach, (2) Leadership Focus, and (3) Structural Variables.

Table 6.1
*Collective Action Theory—Empirical Research Comparison*

| CA Theory/IA Themes (Table 3.2) | CA/IA/MS Research (Table 5.5) |
|---|---|
| Transparency (3, 6, 10) | 1. Systems Approach |
| Rationality (3, 6, 10) | 2. Leadership Focus |
| Reciprocity (3, 6, 10) | 3. Cultural Factors |
| Cooperation (6, 8, 10, 11) | 4. Policy Implementation |
| Communications (6, 8, 10,11) | 5. Structures |
| Culture (3, 10, 11) | 6. Formal Coordinating Mechanisms |
| Investments (4, 7, 9) | 7. Private Sector Role |
| Research (4, 6, 9, 12) | 8. Intelligence Cooperation |
| Field Experience (4, 6, 7, 12) | 9. Budget Factors |
| Trust (3, 6, 10) | 10. Information Sharing |
| Institutions (4, 6, 7, 8, 9, 10, 11, 12) | 11. International Collaboration |
| Policy Implications (4, 6, 7, 8, 9, 10, 11, 12) | 12. Academic Participation |

### *Conditions Which Support Interagency Coordination*

Based on these themes and subsequent comparative analysis (Table 6.1), one can identify the general conditions or factors under which interagency coordination does or does not occur in the maritime commons, and what activities increase the probability of collective behavior and interagency coordination. Table 3.2 represents the combined outcome of the collective action and interagency literature reviews and yields the conditions that are expected to contribute to collective choice mechanisms and interagency coordination; and the empirical research from interviews and case studies (Table 5.5) reveals the practical conditions or factors that research indicates contribute to interagency coordination. Therefore, the initial findings of this

study—in addition to providing an assessment of the theoretical framework itself—help identify the 12 normative conditions under which interagency coordination may occur: transparency, rationality, reciprocity, cooperation, communications, culture, investments, research, field experience, trust, institutions, and policy implications.

Further, a review of the additional 12 themes listed in Table 5.5 reveals that the 12 test hypotheses also reinforce these two lists—directly or indirectly—and provide the ingredients needed for continued research on this topic: systems approach, leadership focus, cultural factors, policy implementation, structures, formal coordinating mechanisms, private sector role, intelligence cooperation, budget factors, information sharing, international collaboration, and academic participation. And a comparative analysis of these two lists (Tables 3.2 and 5.5, as summarized in Table 6.1) yields the primary qualities—conditions and factors—under which interagency cooperation is most likely to take place. Said another way, the absence of these conditions or factors contribute to the lack of interagency coordination at any level of the public-private continuum, and decreases the probability that agencies will make collective choices to support a public good like maritime security.

The next section will examine the six maritime case studies by categories and offers another useful context in which to understand the conditions that support interagency coordination within the maritime security policy world. In general, research indicates that interagency coordination and collective behavior is more likely to occur after implementation of the NSMS (2005)—because interagency processes are established in the supporting plans—and interagency coordination is more likely under non-routine, more complex cases—because existing protocols (employed in routine cases) are often insufficient to prosecute the case—requiring greater dependency on interagency relationships, increased communications, information-sharing, and cooperative interaction.

### *Maritime Case Study Category Comparisons*

The next major finding highlights two basic criteria used to evaluate the maritime case studies. As reflected in Table 6.2, half (3) of the case studies took place before the national policy (NSMS 2005) was implemented and half (3) occurred after the policy was promulgated; and half (3) of the case studies are considered "routine" in nature, and half (3) were designated "non-routine" for assessment purposes. As explained earlier when addressing research design and selection of cases, these six cases were selected in order to provide a wide

variety of operational scenarios and offer a spectrum of case typology, and the cases were also selected to provide a comparative assessment by categories (routine/non-routine, and pre/post NSMS policy).

Table 6.2
*Maritime Case Studies by Category*

| | **Routine—followed established MLE interagency protocols and procedures** | **Non-Routine—high level of complexity, required new MLE policies or engagements** |
|---|---|---|
| **Pre-NSMS** | LINA MARIA (2004)<br>WARM SEAS VOYAGER (2005) | GISSAR (1999) |
| **Post-NSMS** | TORTUGA (2010) | MAERSK ALABAMA (2009)<br>SUN SEA (2010) |

Based upon the initial expectations (Appendix A), basic assumptions (Chapter 2), literature reviews (Table 3.1), and research questions, there were three hypotheses that test the impact of the NSMS policy on maritime cases (H3, H4, H5) and one hypothesis that examines the interagency coordination differences in routine and non-routine maritime cases (H7). This finding is highly significant because it will allow more rigorous testing of these hypotheses, and place a sharp focus on the role of interagency coordination in

joint military, interagency, multinational operations, informed by collective action theory (routine/non-routine); and allows analysis of the real-world operational impact of the primary maritime security policy (NSMS 2005) on the execution of maritime law enforcement cases that took place in the global maritime commons with a nexus to homeland security policy requirements.

This analysis is also significant because of its implications for generalizing these principles to other fields of study and broader public policy processes involving policy implementation at the national or regional level, and offering themes for application to future study of interagency cooperation. Also, there are a host of related theories (grounded, rational choice, chaos, change, games, common pool resource, and hierarchy theories) that could be studied by employing similar evaluation criteria in different operational contexts (i.e. conditions before and after policy implementation under normative and non-normative conditions).

Drawing from the 18 themes (three per case) which were derived from the six maritime case studies (Table 5.4), one can make observations and inferences concerning the impact of the NSMS on these cases and the concurrent influence of complexity during these cases, as well as the interface of the two variables (pre/post-NSMS, and routine/non-routine):

1—[LEFT COLUMN—H3, H4, H5] The routine cases before and after promulgation of the NSMS all followed established Maritime Law Enforcement (MLE) interagency protocols and procedures—taking place in vastly different maritime locations (Eastern Pacific Ocean, Western Atlantic, and Eastern Atlantic)—with the most notable difference being the formal coordinating mechanism (MOTR process) in place for TORGUGA (2010) that was not available for LINA MARIA or WARM SEAS VOYAGER (before NSMS). Consequently, interagency coordination efforts were significantly better in 2010 for the TORTUGA than for LINA MARIA and WARM SEAS VOYAGER (in 2004/2005) specifically in the areas of coordination with foreign law enforcement agencies; information sharing—due to the MOTR protocols—was conducted earlier, more standardized, and persistent during the case; the reporting and decision-making process was more organized, and ensured actionable intelligence was provided to appropriate interagency representatives; and lead federal agency was promptly designated. The routine cases before NSMS (LINA MARIA and WARM SEAS VOYAGER) experienced more fragmented coordination within the interagency due to the absence of a formal coordinating mechanism with pre-positioned interagency liaison officers and designated MOTR conference call participants. For example, the WARM SEAS VOYAGER case was not clearly designated by NSC or national

leaders as a national security *or* law enforcement case, and therefore, precipitated a prolonged period of uncertainty and lack of unity-of-effort within the interagency before the case was concluded. All other operational variables were normative factors and followed procedures expected for routine cases, independent of NSMS being in place. Although there were inefficiencies and miscommunications among interagency players in all three cases, they were not attributable to the presence or non-presence of NSMS; but, clearly, the most notable change for routine cases was the positive role of the MOTR coordinating process after the NSMS was in place.

2—[RIGHT COLUMN—H3, H4, H5] The non-routine cases before and after promulgation of the NSMS each involved a high level of complexity and uncertainty, requiring activation of new MLE procedures or modification of existing policies, and in all three cases there were frequent scheduled and unscheduled interagency engagements, and in all three cases (GISSAR, MAERSK ALABAMA, and SUN SEA) there was extensive and irregular communications with American embassies and international counterparts to resolve these non-routine and complex cases. The same rubric applied to the non-routine cases as for routine, except the observations with respect to the MOTR process as a formal coordinating mechanism are more pronounced. So the downside is lower in the GISSAR case, due to lack of formal interagency

coordinating processes (absence of MOTR), and the upside is higher in the MAERSK ALABAMA and SUN SEA cases (after MOTR was in place) because the risk management, cross-governmental decisions, intelligence cooperation, and private sector participation were made possible by having a designated coordinating methodology in place. A noteworthy observation was that a complex piracy/hijacking case off the Horn of Africa (MAERSK ALABAMA) served as a catalyst for MOTR gaining confidence within the interagency community, especially DOD—underscoring the potential for operational success in the field to stimulate national-level consequences when an interagency coordination tool shows tangible value.

3—[TOP & BOTTOM ROWS, H7] The comparison and analysis of routine and non-routine maritime cases are virtually the same for both general categories (before and after NSMS was promulgated). When tested against all variables (information sharing, intelligence cooperation, private-sector participation, budgetary factors, etc.), non-routine (more complex and chaotic) maritime cases are categorically more difficult for the interagency to coordinate than normative (routine) cases, whether they took place before the NSMS (GISSAR, LINA MARIA, WARM SEAS VOYAGER) or after the NSMS (MAERSK ALABAMA, SUN SEA, TORTUGA). Now, consider the question,

"What is the significance of knowing these inferences—not just from anecdotal field experience, but from empirical data?"

Based upon this study, knowing which cases to select and how to select them may offer future researchers (who want to generalize for small or large-n case studies) a selection criteria and evaluation template to "score" cases and determine if they possess the level of complexity to be considered "non-routine" or non-normative, or if the cases under consideration are less complex and would be considered a normative or "routine" case to study. In this research study, the unit of analysis for the case studies was maritime security cases; however the analytic standards and comparative approach could be generalized to any field of study across the interagency involving different units of analysis. For example, interagency, international, or academic researchers may examine public policy implications of routine/non-routine or normative/non-normative comparisons for first responders dealing with disasters in urban or rural environments, or how elements within a certain government agency process regular and irregular disruptions in communications, critical infrastructure, or GPS signals nationally. The application of this assessment process to future studies is more likely to be through influencing selection of research variables and methods (level of complexity, sequence relative to policy formulation, application of formal

coordinating mechanisms, etc.) rather than the rubric employed, collective choices made, or types of interagency observations.

## Limitations & Biases

This study has inherent limitations and sources of potential bias which must be identified and mitigated. Although in-depth investigation is possible with a relatively small number of case studies and offers the opportunity to identify new hypotheses or build on the selected theory that would otherwise be missed (Hartley, 1994), the selection of a "small-n" case study and 35 interviewees may limit the quality of information obtained due to the global nature and complexity of the maritime security field.

Rohllfing (2004) and Sekhon (2004) both warn against sample bias, and the risk of overemphasis on "well-known cases which may have failed to elicit changes in their field." And they further caution against overgeneralization and inappropriate application of the findings to "types of subclasses of cases unlike those actually studied" (George & Bennett 2005, 32). This study also recognized the potential impact of equifinality—multiple causal paths leading to the same outcome—due to the overlapping nature of observations and the common expectations for each operational case, and incorporated ways to mitigate this influence. Equifinality has important implications for research

strategies aimed at developing causal theory across multiple categories (as in this maritime security study); therefore this study was alert for different causal patterns that lead to a similar outcome, and avoided focusing solely on a single causal generalization (Gerring 2007, 213, George & Bennett 2005, 282).

Triangulation allowed for integration of a wide range of inputs and validated the interpretation of subjective experiences of the interviewees while recognizing there are potential weaknesses in this technique (Miles & Huberman, 1994). Another research concern is derived from interview and survey participants at similar geographic, operational, or government locations within the maritime community or interagency. Further, the research content and information collection is potentially subject to "researcher effect" (Van De Ven 2007, 269-271), because the author is a member of the maritime security community of interest, leading to potential distorted analyses and preconceptions on maritime policy issues. This bias was mitigated by expanding the pool of interviews in appropriate directions (experience, location, organizations) to ameliorate potential sources of error or bias.

Although not fully scoped out, another way this study mitigated the potential adverse impact of personal bias, subject complexity, and average sample size was by leveraging the principles of process tracing methods to approximate the analytical benefit of cognitive mapping, as described in Van de

Ven (2007, 91-93), and also model the discrete elements and sequence of the particular case under evaluation. And in addition to using triangulation to strengthen the construct validity of this study, the study drew upon "engaged scholarship" to balance researcher effect and collection bias, ensuring collaboration among academic researchers and operational practitioners from the beginning—remaining open to the merits of other research models and theories (beyond collective action), as well as sub-theories within collective action behavior (common pool resource, social dilemmas, free riders, tragedy of the commons, etc.).

Potential bias was also mitigated by integrating different views and approaches to expand the inquiry, conferring with non-maritime analysts within academia, government, and industry, to achieve a balance between theory and practice and obtain a higher level of rigor and cross examination (Van de Ven 2007). Each of these steps was taken to improve the utility of generalizing the inferences and findings of this small-scale study to broader academic research and operational application (Ercikan & Roth 2009).

Further, the theoretical framework itself represents a potential limitation in that policy scholars have questioned the general application of some elements of collective action, including models patterned after the tragedy of the commons. For example, cases have been identified where people resolved

environmental tragedies by cooperating and developing rules that carefully coordinated and limited their use of public goods—demonstrating that individuals are *not* helplessly trapped in "tragedies" of their own creation. Rather, the interaction between humans (or agencies) and common-pool resources are much more complex and varied than suggested by the free-rider, prisoners' dilemma, and collective action models (Ostrom 1990, Schlager 2002). Rather than suggesting such models are incorrect, perhaps they have simply been used incorrectly or applied to situations where certain research elements are not captured. Regardless of the position taken, these observations highlight the need—as reflected in the findings of this study—for further research and broader examination of collective action theory.

## Suggested Remedies

The suggested remedies and concluding recommendations build upon the foundation of academic study to underscore the practical utility of this research—drawing from collective action and interagency coordination—in translating theory into a broader learning device or operational "tool." Most importantly, the methodology utilized—to study a critical homeland security issue, identify interagency coordination themes, based upon collective action

theory—offers potential application to broader homeland security challenges, beyond maritime security and the maritime transportation system.

Against the backdrop of collective action theory, the current state of interagency cooperation, and results of this study, these remedies are offered to encourage further examination and exploratory research of this issue and contribute to the body of literature supporting homeland security—particularly in the maritime domain. The following recommendations—while not all inclusive, nor addressing every outcome of the research—lay the groundwork for further study and remedies to improve collective action within three specific areas: theoretical frameworks (R1), homeland security policymaking (R2), and maritime security strategies (R3).

## Collective Action Theory (R1)

This examination of collective action theory and interagency coordination suggests an approach to the public policy process which is very generalizable for expanded study. These areas offer a rich source of academic and operational research because of the proximity to other theoretical frameworks (common pool resources, grounded, rational choice, punctuated equilibrium, multiple streams, change theories, advanced coalition frameworks, etc.), and serve a complementary role with existing interagency cooperation literature

(national security, policy formulation and execution, multi-domain intelligence, etc.). This study draws heavily upon the works of Hardin (1968, 1971, 1982), and Ostrom (1990, 1992, 1994, 1998, 1999, 2000, 2002) making application to a specific area of interest—the maritime commons. To date, most collective action studies have focused more narrowly on a discrete resource, geographic area, or environmental issue; and while this thesis expands that lens to the maritime domain, there are potential gaps in the research and application of collective action theory to broader strategic areas within the security, safety, economic and environmental domains.

Reviewing the body of literature, most of the prominent collective action and public goods-related studies address specific common pool resource problems such as: (1) communal tenure in high mountain meadows and forests in Switzerland; (2) common land and ecological management among Japanese villages; (3) irrigation and water distribution among Spanish farmers; (4) land ownership and resource management in the Philippines; (5) conservation of living marine resources in Canadian fisheries; (6) ground-water basins in California; (7) community forests in India; and (8) forest user groups and irrigation systems in Nepal—all examining the utility of self-governing institutions to resolve public good problems, how to optimize resources in an

uncertain and complex environments, or ways to resolve a specific social dilemma (Ostrom, Walker, & Gardner 1992, Ostrom 1998, Schlager 2002).

This theoretical framework could be useful in addressing larger-scale public policy challenges that transcend bounded geographic, ecological or resource issues—where there is no clear stakeholder or resource sponsor—that hinge upon a public good or common pool resource. On that premise, this study suggests that collective action-interagency coordination research offers applications to broader fields of study in ill-defined areas such as national security, emergency management, national response framework, critical infrastructure protection, and disaster preparedness. Additionally, future research efforts could apply lessons learned from elements of this study in preparation for, response to, and mitigation of natural or man-made events such as terrorist attacks, earthquakes, wildfires, hurricanes, and flash floods as well as emerging challenges such as climate-change, pandemic prevention, international banking, cyber security, energy distribution security, Arctic policy, Southwest Border escalating violence, and transnational crime—gaining a better understanding of interagency and homeland security implications.

Further, by comparing the empirical findings of this study—case studies, documents, and interviews—with the primary themes from the body of literature (collective action theory and interagency coordination), one can see

that there are missing elements within collective action that potentially reflect new areas of study and research. For example, beyond the most influential themes of collective action theory (tragedy of the commons, free-riders, social dilemmas, transaction costs, public goods, focal points, conformity costs, etc.), there are yet-to-be studied areas of collective action theory that research may uncover. As indicated in the major inferences, when comparing the sub-elements of collective action with the empirical findings, there are at least three general areas that deserve attention (Table 6.1): (1) interagency coordination as a *system* of systems, (2) understanding and *leadership* within the interagency system, and (3) interconnected *structures* within and among the layers of interagency organizations.

### Homeland Security Policies (R2)

Building on the potential application of collective action theory to broader academic research (R1), there is another potential gap which points to the study of interagency cooperation beyond the boundaries of this theory. Therefore, this study could serve as a catalyst for policymakers to generalize its findings by expanding the focus on interagency coordination capabilities—a significant outcome of this study reinforced by empirical research—and recognizing the utility of other theoretical frameworks.

A careful review of policy processes (Sabatier 2007) and analyses (Jenkins-Smith 1990) suggests the benefit of complementary and alternative theoretical frameworks in formulating appropriate policies to address the significant challenges of national and homeland security. While this study highlighted the goals and perceptions of many of the interagency actors, it also uncovered the serious lack of understanding of the policy process among cross-governmental organizations, and the complexity that can impede those stakeholders who do understand the process. And given that the "policy cycle" is not a linear process with discrete stages, researchers examining the interagency process—beyond collective action theory—should: (1) be aware of different theoretical perspectives, which forces analysts to clarify assumptions; (2) develop competing hypotheses that could lead to alternative inferences; and (3) solicit multiple perspectives by considering a "multiple-lens strategy," including institutional rational choice, stages heuristics, advocacy coalition frameworks, punctuated equilibrium, or multiple streams—which may spawn a variety of models, frameworks, or inferences to better understand and confront the deeply imbedded barriers to interagency cooperation within the government (Sabatier 2007, Lester & Goggin 1998, Ostrom 1990, Kingdon 1984, Baumgartner & Jones 1993, Sabatier & Jenkins-Smith 1988).

## Maritime Security Imperatives (R3)

This study also identified—through the lens of collective action theory—many of the (already) known features of the maritime transportation system and uncovered some lesser-known challenges that have remained unresolved because they are too big, too hard, or too expensive to address with existing interagency structures, national policies, and budgetary barriers. Understanding the nature of maritime security in the context of a globalized economy, asymmetric threat environment, and fragmented policy landscape is a complex and (at times) an overwhelming proposition. These factors instill a sense of urgency in planners and strategists because public policy analysis is formally—and informally—"increasingly intertwined with the making of public policy in modern politics" (Jenkins-Smith 1990). From this study, themes emerge that impact the public policy process including, the unstructured relationships among governmental agencies and departments; institutional (budgetary, political, and cultural) factors of the democratic system; and power plays—intended and unintended—that take place among the branches of government and within the interagency.

Finally, there are four recommendations—under the final remedy (R3)—that are vital to strengthening interagency coordination and thereby improving the level of national-level maritime security resilience:

1—Awareness and Understanding: There must be an increased awareness and fundamental understanding across society that America was—and remains—a maritime nation vitally dependent upon the global supply chain and uninterrupted flow of maritime commerce to sustain *economic* survival. The strategic communications and public engagement needed to establish and maintain this awareness—short of a maritime attack similar to September 11th—will take a coordinated and dedicated focus to inform the general public, the Congress, and the interagency itself. This understanding of what is at stake and the commitment required to ensure resilience of the maritime transportation system is highlighted throughout this study.

2—Systems Approach: Maritime transportation is best understood as a system of systems—a network of interconnected and interdependent activities which is a subset of a broader national and global architecture. Because of the current overlapping authorities, fragmented policies and uncoordinated implementation of maritime strategies—in the public and private sectors—

there is a lack of investment in the maritime security transportation system and therefore, the most acute vulnerability is neglect and depreciation of a system which is required to accomplish the maritime commerce described in this study. Without a systemic and integrated approach to the maritime security challenge, there will continue to be policy—thoughtfully crafted and even well-funded inside government—that is not implemented or directed efficiently. Legislative action will be taken by Congress that is unintentionally, yet painfully, detached from the essential planning factors of maritime operational and market requirements; and the nation will be handicapped or unaware of lost economic opportunities and increasingly vulnerable to the nefarious intent of criminal or terrorist elements.

3—Policy Implementation: By implementing the current policy guidance (NSMS 2005), many of the maritime imperatives identified in this study would gain the attention needed to elevate the level of interagency coordination in support of maritime security resilience. The NSMS (2005) offers a holistic approach to establish an initial national-level maritime safety and security posture—a coordinated, fully-integrated interagency product that reflects the efforts of a cross-governmental body (Figure 1.1). To date, three of the eight supporting plans (GMII, MDA, and MOTR) have received some level of multi-

agency support and are moving forward—in part—due to the direction and resources provided by Congress and government agencies. The remaining five plans (Domestic Outreach, International Outreach & Coordination, Maritime Transportation System Security, Maritime Infrastructure Recovery, and Maritime Commerce Security) remain largely unexecuted in the eyes of commercial maritime experts and interagency policy planners. These policies need to be operationalized through action plans—moving beyond an "investment strategy" or "solutions analysis"—that assign specific responsibility within the USG, and are subsequently enforced by the NSC. By targeting these five remaining plans, the maritime themes and vulnerabilities identified in this study (Appendix A, Table 6.1) will gain critical attention needed to achieve funding and legitimacy in the eyes of interagency leaders: formal coordinating mechanisms, private sector participation, intelligence cooperation, budgetary program sponsorship, multi-agency information-sharing, international collaboration, integration of maritime technologies, and academic research.

4—Leadership Focus: The most important maritime security strategic imperative, because action on the other findings is impeded without it, is to establish a position, office, or agency (existing or new) within the interagency to serve as the global synchronizer, executive agent, and policy integrator for

implementation of the NSMS and "all things maritime." A significant finding of this study—reinforced by the empirical research—is that there is no single authority responsible to oversee the maritime system, and therefore, policy implementation is largely left to the uncoordinated decisions of the interagency members. Many of the findings of this study are direct or indirect symptoms of this shortfall; and the root cause points to the absence of a specific element or organization (below the level of the NSC) within the interagency that has been assigned responsibility to execute the NSMS.

While a few interviewees were agnostic on this issue or believed that centralized unity-of-command was less important than de-centralized unity-of-effort, the majority of those interviewed saw an overwhelming need for "empowered visionary political leadership," or at the very least, "somebody who is placed in charge." As with other national strategies, it could be a single department—like DOT/FAA leads civil aviation or DOD/DTRA leads counter-proliferation of WMD; a four-star joint military headquarters COCOM—like USSOCOM leads Counterterrorism, or USNORTHCOM leads Pandemic Influenza; or it could be a czar-like position with cabinet-level authority within the Executive Office of the President (EOP) at the White House—like ONDCP leads Counternarcotics, or Office of the U.S. Trade Representative (USTR) is responsible for American trade policy.

The important point is that, absent a single coordinating authority, the interagency will continue to selectively implement maritime security policies based on cultural expediency and budgetary limitations; and information will continue to be shared episodically, the private sector will continue to be sporadically included in maritime planning, intelligence integration will remain hidden behind "walls" of agency fortresses, and international collaboration will remain "too hard to accomplish."

## Conclusion

The end of bi-polar Cold War relationships unleashed a host of uncertain forces and asymmetric challenges that continue to define the 21st century global security environment. Just as the intelligence community failed to anticipate terrorists using commercial planes as weapons to attack this country, who would have predicted—even twenty years ago—that piracy would be threat to maritime transportation in the modern era? Yet, as this study reveals, our nation is ill-equipped to deal with emerging threats—especially in the global maritime commons—because it often employs 20th century instruments of government to address 21st century challenges. This study asserts the need for updated thinking and improved methods of interagency coordination that

leverage the enabling principles of collective action to address the most challenging maritime security problems.

Drawing from national-level strategies, collective action theory, interviews of subject matter experts, and crucial case studies, this study examines the central role of interagency coordination supporting the execution of maritime security policy in the global maritime commons. By employing 13 fundamental research questions and 12 hypotheses, the study reveals the need for a more integrated and coordinated role among government, industry, and academia to address a range of national-level maritime security imperatives. And this study further emphasizes that a better understanding of public policy models and frameworks, through collective behavior—and related themes such as common pool resources and public goods—is needed to provide an informed approach to closing maritime security gaps operationally and at the national policy level. This research also reinforces some previously-documented observations in the maritime security field, uncovers new findings of national significance, and reveals the need for deeper study of maritime security and interagency coordination to develop additional research questions and hypotheses to support national security and homeland security objectives.

To that point, this study is not only relevant for maritime security problems, but also has application to a wide variety of contemporary issues

requiring whole-of-government, cross-agency, and international collaboration in providing public goods, common pool resources, or collective behavior. And if maritime security can be improved—even incrementally—then this approach offers a model or tool for application to broader security, safety, economic, or environmental challenges in the global commons. By suggesting an approach for acting together, and making collective choices in support of common interests in the maritime domain, this study has practical utility in addressing more far-reaching public policy challenges requiring the benefit of collective action and coordination across agencies, departments, and organizations.

These are historic and consequential times in the field of national, homeland, and maritime security because U.S. (and international) economic safety and security depend upon the free flow of trade and commerce in the global supply chain and maritime commons. The maritime transportation system relies upon an interconnected and complex network of resources and capabilities—managed largely by a private sector that is often very guarded in its business activities. For all those reasons this thesis focused on specific interagency coordination proposals and public-private collective action remedies to support homeland security resilience and execution of the National Strategy for Maritime Security (NSMS)—and offering a potential source of future research and analyses to expand the field of study.

APPENDIX A

Maritime Security Interagency Coordination
Initial Themes, Expectations, and Propositions

| Maritime Security Themes | Strategic Imperatives & Definitions | Collective Action Theory | Operationalizing Questions |
|---|---|---|---|
| 1<br>**Interagency Coordination**<br><br>Within the U.S. government interagency, all departments, agencies, and organizations must expand the level of coordination and cooperation to close gaps that could be exploited by nefarious elements (NRC 2008). | Significantly expand whole-of-government connectivity among USG agencies, offices, departments, and military elements at federal, state, local levels (Wilson 1989, Raach & Kaas 1995, Donley 2005).<br><br>Collective action offers a range of factors that affect decisions, especially the importance of efficacy and concern about the collective good (Olson, 1965). | **Public Goods**<br><br>Goods that are hard (or impossible) to produce for private profit, because the market fails to account for large positive externalities. Maritime security is non-rivalrous, non-excludable public services—consumption of goods by one member does not reduce availability for others, and no one can be excluded from using the good (Samuelson 1954). | • Did departments & agencies of the USG engage in coordinated planning and execution?<br>• Did interagency actions reflect a common view & commitment to the public good (maritime security)?<br>• Is there an established organization focused on the integration of interagency capabilities and leveraging collective efforts to achieve maritime security? |

APPENDIX A (cont'd)

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| **2 International Collaboration**<br><br>The post 9-11 asymmetric threat environment requires a higher level of collaboration across international boundaries. A globalized supply chain depends on collective safety, security, economic, and environmental priorities (NSMS 2005). | Build a global maritime information exchange system to expand international engagement and foreign disclosure authorities (Haas 1980, Carafano & Weitz 2007, NRC 2008).<br><br>"Global collective action" involves principles of international cooperation; factors that promote or inhibit it, at the global level (Sandler 2004). | **Tragedy of Commons**<br><br>Public goods exist and will be destroyed if exploitation is not controlled through external intervention. Action must be taken to align personal gain w/ group good. Those who pursue self-interest impose collective costs; when the common resource is lost, all members face ruin because they tried to maximize self-interest (Hardin 1968, Sandler 2004). | • Is there a global urgency which views maritime threats as a tragedy of maritime commons?<br>• What role did international maritime organizations play in execution of the cases?<br>• Was there a methodology in place to incorporate international cooperation?<br>• Is there a culture of global collaboration that recognizes the need to align national gain with collective security requirements? |

APPENDIX A (cont'd)

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| **3**<br>**Private Industry Participation**<br><br>The role of the commercial maritime industry in planning and execution of maritime security is fragmented. Merchant mariners and the private sector will be adversely impacted by any maritime mishap or attack in the maritime domain (GAO 2005). | Provide a framework and process for commercial maritime industry participation with government to improve policy enforcement, and appropriate the role of the private sector (GAO 2005, Frittelli 2008).<br><br>Public-private partnerships directly impact collective action, and foster movement of groups across private & public boundaries (Bratman 1993). | **Free-riders**<br><br>There is a natural tendency for groups to withhold their contribution to support collective efforts while enjoying the benefits of the broader group. Members defect when they consider that their support to the collective enterprise will not impact its success or failure. Government may use laws and statutes to induce participation, through coercion or incentives, and prevent parties from reneging (Olson 1965). | • Was the private sector involved in execution of maritime cases?<br>• Is commercial maritime industry incentivized to participate?<br>• What hurdles impede private sector partnerships in maritime security?<br>• Is the commercial maritime industry enjoying the benefits of public security while failing to contribute to policy execution?<br>• What role should the private sector play in supporting maritime security objectives? |

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| **4 Information Sharing**<br><br>Isolated silos of information are maintained within closed systems. Organizational policies, rule sets, statutory regulations, tradition, and culture are factors that impede the sharing of information across USG. Systemic policy changes are needed to establish mandatory sharing of information across agency boundaries (NRC 2008). | Open lines of communication and close barriers based on data controls, system certification and authentication, privacy and security classification concerns (Relyea 2004, U.S. GAO 2005, U.S. GAO 2006, NRC 2008, Frittelli 2008).<br><br>Collective action in the global economy requires movement of information across organizational seams by government, industry, private, and public organizations (Melucci 1996). | **Social Dilemmas**<br><br>While supportive of group action, some stakeholders pursue activities that reward them individually, despite being contrary to their commitment to collective efforts. Each party must yield something of value so the "exchange" will make them better off. Repeated trials aid mutually valued coordinated action, so resolution is based on trust and experience (Weimer & Vining 2005). | • How transparent was sharing of maritime information among joint, interagency, multinational interests?<br>• Did information sharing help or hinder execution of maritime policies in these cases?<br>• How might elements of the interagency be incentivized to participate and share information more openly?<br>• What external forces could be applied to increase confidence that counterparts will honor their obligations? |

APPENDIX A (cont'd)

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| **5 Strategy Implementation**<br><br>National maritime strategies have been implemented and enforced in a fragmented and uneven manner. The uncoordinated proliferation of maritime initiatives and lack of a systems approach are the most significant symptoms of this strategic shortfall (NSMS 2005). | Clarify lines of responsibility within the maritime security community of interest (COI) and operationalize the specific tasks contained in the NSMS eight supporting plans (Brooks 1986, Till 1994, NSMS 2005)<br><br>Collective action among elements of government & instruments of national security must leverage costs to implement policies (Gilbert, 2006).<br><br>Transaction costs can be divided into search, negotiation, monitoring/enforcement categories (Weible 2008). | **Transaction Costs**<br><br>Participants desire to achieve benefits of collective action while minimizing costs—time, efforts, and resources—to contribute to collective decisions. Without mechanisms to effectively negotiate collective efforts, costs can overwhelm players, forcing them to withdraw. With well-designed institutions, agreements and costs are better managed (Hardin 1982). | • How did collective efforts of participating elements of military, civilian, & industry reflect policy execution?<br>• Could field execution improve through better policy implementation?<br>• Does the NSMS serve as effective policy to enable maritime stakeholders to see a beneficial cost-benefit to participate?<br>• Have transaction costs played a role in the fragmented and incomplete execution of the NSMS?<br>• How do costs break down by subcategories? |

APPENDIX A (cont'd)

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| **6 Integration of Maritime Systems**<br><br>Interoperable fusion analysis and anomaly detection tools must be integrated into an enterprise architectures that support common operating and user-defined operational pictures. This holistic system of systems should support all technologies and rule sets (NRC 2008). | Develop an integrated and automated Service Oriented Architecture (SOA) to fuse data bases and technology systems which leverage best practices across intelligence and information providers (Panayides 2006, Ince, Topuz, Panayirci, & Isik 2000)<br><br>Each collective action player can initiate corrective measures to improve group action due to interconnectivity and costs (Searle 1990). | **Conformity Costs**<br><br>There is a need to impose costs on individual groups to achieve collective goals despite their objection. These costs occur when the collective decision differs from that of an individual's ideal preference. Integrating and negotiating common courses of action will require trade-offs. Governments are continually weighing what costs its citizens are prepared to bear (Ostrom 1990). | • Were the maritime responders able to leverage the benefits of an integrated information and intelligence systems?<br>• Were there successes or failures linked to systems and data bases?<br>• Should the USG impose standards for systems integration and allow conformity costs and outside forces to compel compliance?<br>• Do existing costs contribute to agency actions that create free riders and non-participation? |

APPENDIX A (cont'd)

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| **7 Intelligence Cooperation**<br><br>Despite the formation of new national-level organizations to coordinate and standardize intelligence products, the collection, analysis, and dissemination of intelligence data and information remain an acute vulnerability within all domains, including the maritime sector (NSCT 2006). | Optimize intelligence collaboration and dissemination to improve notification and warning indicators as well as detection and monitoring (Betts 1978, Hughes-Wilson 1999, Donley 2005)<br><br>Individuals will not always act voluntarily to achieve the common interest unless there is coercion or incentives to compel action (Ostrom 1990). | **Coordination**<br><br>Group members must decide individually what they want, how prepared they are to contribute to the collective enterprise, and how to coordinate their efforts for the greater good. Coordination problems are especially pervasive for large and multiple competing groups (Carney 1987). | • Treating maritime security and intelligence as a public good, was there a coordinated plan that enabled field commanders to make timely decisions?<br>• How can intelligence sharing be improved to avoid a maritime crisis?<br>• Is there a holistic approach within the USG that views intelligence as a collective good that must be produced and distributed jointly?<br>• What signals, warning, and notification are made available through intelligence systems? |

APPENDIX A (cont'd)

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| **8 Governance & Leadership**<br><br>Unlike other national strategies, the maritime domain lacks a single global synchronizer, integrator, or executive agent to oversee and enforce joint, interagency, multinational requirements of complex and interconnected national-level maritime policies (NRC 2008). | Establish a single global synchronizer or executive agent within the U.S. government who is responsible for maintaining and executing the strategy (Freidrich & Mason 1940, Miyakawa 2000, NSMS 2005, NRC 2008).<br><br>"Collaborative governance" involves the conflict between individual interests and achievement of shared interests for a group of individuals (Donahue & Zeckhauser, 2006). | **Focal Points**<br><br>Coordination will occur if participants identify a leader to organize efforts and target energy to common purposes. Coordination is a prerequisite to successful collective action, and problems often surface from uncertainty or insufficient information. Once members agree on the rules and lines of responsibility, problems are often solved (Medina 2007). | • Was there a focal point that provided an integrated and fully-coordinated command & control process?<br>• What steps could be taken to improve the operational and strategic organizations?<br>• Who is the single focal point to synchronize, integrate all maritime security actions within the USG?<br>• Is there a designated agency or executive agent that is attempting to provide the consolidated leadership and oversight of maritime security enforcement and analysis? |

APPENDIX A (cont'd)

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| **9 Cross-Domain Solutions**<br><br>The inability to move data and information across security classification levels impedes maritime security. Rigid protocols based on "need-to-know" vs. "need-to-share," and lack of a non-classified enclave aggravate existing security gaps (USN 2007, DOT 2006). | Expand capability of moving information among security classification levels to minimize over-classification and maximize flow of information (Davis 1952, Kaiser 1989, Hubbard 2005)<br><br>Collective action highlights the value of groups "sharing intentions" through common activity that requires "common knowledge." Mutual obligations & collective intentional behavior also need to be addressed (Gilbert, 1989). | **Externalities**<br><br>Government is expected to prevent "public bads" that jeopardize safety or security, and remedy threats to public welfare (i.e. security, pollution control, zoning, and uncoordinated maritime security). Because consumption of public goods is disconnected from their production, consumers will be tempted to overuse or waste them (Sandler 2004). | • Did cross-domain externalities such as access to information and intelligence impede execution of the cases?<br>• Was adequate classified & non-classified info available to support the mission?<br>• Was information over-classified such that operations were hindered?<br>• Are there negative externalities within the security systems which contribute to the uncoordinated nature of maritime security efforts? |

APPENDIX A (cont'd)

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| **10**<br>**Concept of Operations**<br><br>Given the existing governance protocols, operational activity, and technology systems, there must be bridging mechanisms to operationalize maritime security functions. Concepts of Operations (CONOPS) are the action plans and rule sets that enable execution of operational requirements (NSMS 2005, OPNAV 2007). | Synchronize operational planning, standard operating procedures, and rule sets across joint, interagency, coalition organizations (Goertz 2005, OPNAV 2007, USCG 2007, NRC 2008)<br><br>Collective action includes groups of principals organizing to voluntarily retain the residuals of their own efforts & collectively solve common problems (Ostrom 1990). | **Principal-Agent**<br><br>Costs must be managed by those in authority delegating action to agents who carry out certain decisions for collective action. Principals possess authority to make certain decisions, and try to align agent preferences with their own to minimize agency loss. Delegation entails a trade-off between the benefits of having agents taking action and the effort required to monitor their behavior (Olson 1965). | • Have principal-agents established an organized CONOPS to inform coordinated field actions?<br>• Was there consensus on how to proceed in conducting the cases, informed by standard operating procedures?<br>• Have national maritime leaders delegated the requirement to develop and employ standardized maritime CONOPS? |

APPENDIX B

TYPES OF EVIDENCE EMPLOYED

| Source of Evidence | Strengths | Weaknesses |
|---|---|---|
| Documentation | • stable-repeated view<br>• unobtrusive-exist prior to case study<br>• exact-names, etc.<br>• broad coverage, extended time span | • retrievability-difficult<br>• biased selectivity<br>• reporting bias, reflects author bias<br>• access-may be blocked |
| Archival Records | • same as above<br>• precise and quantitative | • same as above<br>• privacy might inhibit access |
| Interviews | • targeted-focuses on case study topic<br>• insightful-provides perceived causal inferences | • bias due to poor questions<br>• response bias<br>• incomplete recollection<br>• reflexivity-interviewee expresses what interviewer wants to hear |
| Participant Observation | • same as above<br>• insightful into interpersonal behavior | • same as above<br>• bias due to investigator's actions |
| Physical Artifacts | • insightful into cultural features<br>• insightful into technical operations | • selectivity<br>• availability |

Source: Yin, 2009, p. 102.

## APPENDIX C

## LIST OF INTERVIEWEES

Interviewee 001. Homeland Security, National Security Senior Policy Official. 10 July 2009. New York, N.Y. Interviewer: Author

Interviewee 002. Commercial Maritime Industry, Naval Senior Policy Official. 25 March 2010. Portsmouth, New Hampshire. Interviewer: Author

Interviewee 003. Department of Homeland Security, Senior Maritime Security Expert. 10 May 2011. Washington, D.C. Interviewer: Author

Interviewee 004. Department of Homeland Security, Senior Maritime Security Expert. 10 May 2011. Washington, D.C. Interviewer: Author

Interviewee 005. National Security, Senior Policy Official. 11 May 2011. Washington, D.C. Interviewer: Author

Interviewee 006. Commercial Industry, Senior Maritime Expert. 11 May 2011. Washington, D.C. Interviewer: Author

Interviewee 007. Department of Justice, Senior Technologist. 12 May 2011. Washington, D.C. Interviewer: Author

Interviewee 008. Department of the Navy, Chief of Naval Operations. 12 May 2011. Arlington, Virginia. Interviewer: Author

Interviewee 009. Commercial Industry, Senior Maritime Expert. 12 May 2011. Chantilly, Virginia. Interviewer: Author

Interviewee 010. Department of Transportation, Maritime Administration Official. 13 May 2011. Washington, D.C. Interviewer: Author

Interviewee 011. Department of Transportation, Maritime Administration Official. 13 May 2011. Washington, D.C. Interviewer: Author

Interviewee 012. Department of Homeland Security, Science & Technology, Borders & Maritime Security Official. 13 May 2011. Washington, D.C. Interviewer: Author

Interviewee 013. Department of Justice, Senior Maritime Expert. 13 May 2011. Washington, D.C. Interviewer: Author

Interviewee 014. Department of Homeland Security, Senior Maritime Law Enforcement Official. 14 May 2011. Washington, D.C. Interviewer: Author

Interviewee 015. National Counterterrorism Center, Senior Interagency Advisor. 18 May 2011. Vienna, Virginia. Interviewer: Author

Interviewee 016. Department of Homeland Security, Transportation Security Administration, Senior Maritime Expert. 19 May 2011. Arlington, Virginia. Interviewer: Author

Interviewee 017. Department of Defense, Africa Command, Senior Maritime Expert. 24 May 2011. Stuttgart, Germany. Interviewer: Author

Interviewee 018. Department of Homeland Security, Africa Command, Transportation Security Administration (TSA), Senior Interagency Advisor. 24 May 2011. Stuttgart, Germany. Interviewer: Author

Interviewee 019. Department of Homeland Security, Africa Command, Customs & Border Protection (CBP), Senior Interagency Advisor. 9 June 2011. Stuttgart, Germany. Interviewer: Author

Interviewee 020. Commercial Maritime Industry, Senior Maritime Official. 13 June 2011. Oakland, California. Interviewer: Author

Interviewee 021. Commercial Maritime Industry, Senior Maritime Official. 16 June 2011. Norfolk, Virginia. Interviewer: Author

Interviewee 022. Commercial Maritime Industry, Senior Maritime Official. 16 June 2011. Norfolk, Virginia. Interviewer: Author

Interviewee 023. Commercial Maritime Industry, Senior Maritime Official. 17 June 2011. Seattle, Washington. Interviewer: Author

Interviewee 024. Department of Justice, Senior Legal Expert. 17 June 2011. Washington, D.C. Interviewer: Author

Interviewee 025. Department of Homeland Security, Customs & Border Protection (CBP), Senior Marine Operations Expert. 21 June 2011. Washington, D.C. Interviewer: Author

Interviewee 026. Department of Homeland Security, Southern Command, Senior Maritime Advisor. 24 June 2011. Miami, Florida. Interviewer: Author

Interviewee 027. Commercial Maritime Industry, Senior Maritime Executive. 28 June 2011. Harahan, Louisiana. Interviewer: Author

Interviewee 028. Department of the Navy, Senior Maritime Security Expert. 30 June 2011. Washington, D.C. Interviewer: Author

Interviewee 029. Department of Homeland Security, Senior Policy Official. 1 July 2011. Washington, D.C. Interviewer: Author

Interviewee 030. University Professor, Maritime Expert. 6 July 2011. Colorado Springs, Colorado. Interviewer: Author

Interviewee 031. Commercial Maritime Industry, Senior Port Security Official. 8 July 2011. Los Angeles, California. Interviewer: Author

Interviewee 032. Department of Homeland Security, Senior Maritime Security Expert. 19 July 2011. Washington, D.C. Interviewer: Author

Interviewee 033. National Security, Senior Policy Official. 19 July 2011. Washington, D.C. Interviewer: Author

Interviewee 034. Department of Defense, Senior Intelligence Policy Official. 21 July 2011. Washington, D.C. Interviewer: Author

Interviewee 035. Department of Defense, Senior Policy Official and Senior Officer serving on COCOM headquarters staff. 12 September 2011. Tampa, Florida. Interviewer: Author

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