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Learning to Learn: Military Learning in Disaster Relief Operations

Caroline Bechtel
cbechtel@wellesley.edu

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Learning to Learn: Military Learning in Disaster Relief Operations

Caroline R. Bechtel

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Contents

Abstract

How does the military learn in disaster relief operations? The American military has long played a critical role in international responses to natural disasters. Its forward-deployed resources, manpower, and other unique capabilities make it a critical asset for the larger disaster relief community. While the U.S. military and scholars alike have poured considerable resources into understanding how the military learns in traditional operations, this literature fails to provide a compelling explanation for how and why the military learns in non-combat operations. Interviews with involved officials and primary source evidence of learning suggests that the military is better at learning in these operations than the current literature would predict. This project relies heavily on interviews with military and civilian personnel, military after action reviews, and authoritative secondary sources. The current literature on military learning predicts low levels of learning to occur in non-combat operations. Nevertheless, the U.S. military in the Asia Pacific has consistently learned from disaster relief operations and has, in fact, significantly improved its formal and informal processes of learning during these operations. To put it simply, the military has actively improved its capacity to learn how to learn. This finding upends the current literature on military learning and calls for a reevaluation of the potential value of non-combat operations in the future.

Acronyms

AAR: After Action Review
C2: Command and Control
CFE: Center for Excellence
CSF: Combined Support Force
DART: Disaster Assistance Response Team
DoD: Department of Defense
LNO: Liaison Officer
FM: Field Manual
HA/DR: Humanitarian Assistance/ Disaster Relief
HAST: Humanitarian Assistance Survey Team
HQ: Headquarters
JTF: Joint Task Force
JP: Joint Publication
MEB: Marine Expeditionary Bridge
NGO: Nongovernmental organization
OFDA: Office of Foreign Disaster Assistance
OUA: Operation Unified Assistance
PACOM: Pacific Command
UNOCHA: United Nations Office for the Coordination of Humanitarian Affairs
USAID: United States Agency for International Development
USFJ: United States Forces Japan
USG: United States Government

Introduction

On March 20, 2003 the United States invaded Iraq, effectively seizing Baghdad and toppling Saddam Hussein's government. By the end of that year, the American military mission in Iraq was failing. Insurgents had successfully driven out the United Nations, the international staff of the Red Cross, and other aid groups from the country, successful isolating American and Iraqi partner forces.[1] American troops were dying every day in clever insurgent attacks, as the mightiest military in the world suffered at the hands of an enemy it could not find and could not understand. Simply put, the U.S. had started a war it didn't know how to win.

Belatedly and after numerous setbacks, the U.S. Army and Department of Defense recognized their deficiencies and went to the Doctrine Division of the Combined Arms Center to produce a working Counterinsurgency Field Manual (FM 3-07.22). After edits and a rewrite led by General David Petraeus, this working field manual emerged as the now-famous Field Manual 3-24. Designed by a motley crew of military professionals, academics, media experts, and NGO workers, FM 3-24 served as a guide for the military's operations in Iraq and represented a paradigm shift from a more traditional style of warfare to a Mao-esque "hearts and minds" campaign. It was implemented in 2006-2007 in the famous "surge" of American troops in Iraq.

Ten years later, it remains unclear whether the lessons embodied by FM 3-24 propelled the American mission in Iraq to success. However, it is clear that the military, as an institution, began and completed a learning process. After experiencing failure, the military modified its approach to the conflicts in Iraq through a number of doctrinal, institutional, and changes. With the ever-increasing body count as a constant and grim point of pressure, the Army incorporated

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[1]Philip Gourevitch, "Winning and Losing," *The New Yorker,* 12 December 2003

change throughout its ranks because, in the chaos of post-Saddam Iraq, it was adapt or die. The story of FM 3-24 is a classic case of military learning, and one that exemplifies our traditional understanding of why militaries change.

While the story of FM 3-24 is a well-known and remarkably successful example of learning, we should not have expected anything less. Based on the literature of military/bureaucratic learning, the conflict in Iraq should have produced a high degree of military learning. Generally, scholars point to several factors that spur such learning; geopolitical threat, failure in war, and lethal pressures are listed among them. In Iraq, Americans and allies were dying. The insurgency threatened to undermine all American efforts, and the military was failing to respond. The process that produced FM 3-24 both exemplifies and reinforces how the military leverages learning as a tool of war.

Armed conflicts and wars are not the only areas in which the military can deploy such learning. The American military has recently played a critical role in responses to international natural disasters. Its forward-deployed resources, manpower, and other unique capabilities make it a critical asset for the larger disaster relief community. Since the first international disaster relief operation it coordinated in the Indian Ocean in 2004, the U.S. military has responded to about one to two international disasters per year. These operations are usually entirely absent of violence and therefore fall outside of the military's core mission of fighting and winning the nation's wars. Such non-core missions are not a priority for the American military. Additionally, the pressures that traditionally drive military learning, according to the literature, are not there. Thus, disaster relief operations present a difficult test for the military's learning process.

Even absent the established drivers of military learning, does such learning take place in these operations? According to the traditional literature, the answer should be no. However, this thesis provides evidence to the contrary. The military has in fact learned from these disasters and it has incorporated these lessons from operations into changes in institutions, doctrine, and practice. It has produced and updated new doctrine on humanitarian assistance and disaster relief operations; assimilated disaster relief into multinational training exercises; invested in a research center aimed at improving disaster responses; and improved its execution in responses over time. These changes are indicators of learning. Such indicators beg a different question: why did the military learn at all? That is, why did the military learn in a situation without the traditional incentives for learning? Secondly, what is the nature of this learning and what does its characteristics tell us about the breadth, depth, and durability of this learning?

In exploring and answering these questions, this paper addresses a significant gap in the literature on military learning. While much has been written about how the military learns as a tool of war, few authors have addressed the military's capacity for learning in the context of peaceful operations conducted for peaceful ends. Since 2004, the U.S. military has made these peaceful operations, particularly in the Asia Pacific and Central Asia regions, regular practice. From Indonesia to Japan to Nepal, the military has coordinated disaster relief and attempted to foster learning in this inorganic operating environment. This operational data has never before been analyzed through the lenses of learning, and yet it provides invaluable insight into both why and how the U.S. military develops its capacity for enlightenment.

Chapter I
Conceptualizing Military Learning

Definition of Learning

What is learning? I define learning as the deliberate incorporation of experience into new organizational and individual practices and procedures.[2] Learning is a type of change, but it is not merely change. Change may or may not be intentional and may occur naturally over time. Learning, on the other hand, is deliberate and active. As learning scholar Levy writes, "actors actively search for the information they believe is necessary for a valid interpretation of historical experience."[3]

Figure 1.1 **How Lessons are Learned**
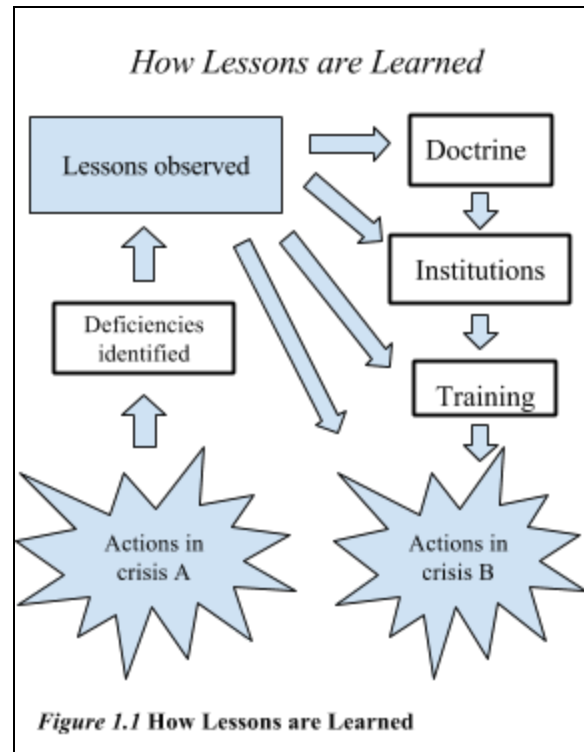
So what is *military* learning? Previous scholarship generally parses military learning into three overlapping categories-- adaptation, innovation, and organizational change. Generally, adaptation refers to low-level, tactical changes made within an iteration, operation, or war (Russell 2010; Gray 2006). An example of adaptation is the military's use of metal detectors and development of the Mine Resistant-Ambush Protected (MRAP) Vehicle after losing a number of soldiers to improvised explosive devices (IEDs) in Iraq. Innovation typically refers to technological changes, such as the development of new weapons systems. Organizational change

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[2] This definition shares a number of characteristics with that of Levy (1994), particularly in its attention to experience as a basis of learning.

[3] Jack S. Levy, "Learning and Foreign Policy: Sweeping a Conceptual Minefield," *International Organization*, Vol. 48, No. 2. (Spring,1994), 283

involves the incorporation of lessons into major institutional changes, and is often identified by changes in doctrine (Grissom 2006; Posen 1986; Avant 1993). My definition and indicators of learning are largely derived from these organizational theories. As have scholars before me, I use changes in doctrine and institutions as an indicator of learning. However, I add one additional indicator of learning, which I have labeled 'changes in practice'.

In theory, changes in doctrine, institutions, and training should effect changes in practice. Changes in practice may also emerge as a direct consequence of experience. For example, when the commander of a disaster relief operation decides to establish a civil-military coordination cell, she may do so because of doctrine or because of her own personal experiences.[4] In sum, learning is the incorporation of lessons into training and doctrine that effectuates changes in practice.[5]

Literature Review

A robust literature examines how militaries adapt, innovate, and change. While this literature does not substantially address how the military learns in operations other than war, it effectively establishes the forces that drive successful military learning. This literature falls loosely into three overlapping perspectives: geopolitical (Posen 1986;Rosen 1991; Zisk 1993; Kier 1995, Farrell 2013), bureaucratic (Allison 1971; Halperin 2006; Russell 2010;), and a personality and leadership perspective (Nagl 2002; Ricks 2009; Avant 2010). It is important to note that these categories are largely implicit, as few social scientists approach military learning from one perspective at the exclusion of others. It is likewise important to emphasize that

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[4] Grissom, Adam. "The Future of Military Innovations," *Journal of Strategic Studies*. Vol. 29 , Iss. 5. 2006
[5] To be clear, much of this definition is derived from that of previous scholarship, but I state explicitly what many of these scholars assume will happen with changes in doctrine and institutions: changes in practice.

scholars within each category, while they agree on the structural dynamics that catalyze learning, can disagree on the proximate cause of that learning. For example, some attribute learning to civilian policymakers, while others attribute it to military strategists. In this literature review, I will explain each of these perspectives and drivers of change.

The Realists

Scholars of the international political system argue that geopolitical pressures are crucial to successful military learning (Zisk 1993; Posen 1986; Farrell 2013). For the sake of simplicity, I will call these scholars 'the realists' because they assume that military learning is intimately linked to a state's pursuit of power. At its most basic level, the geopolitical approach assumes that the military is sensitive to the strategic pressures of its operating environments and will adjust its doctrines, institutions, and practices accordingly.[6] In practice, this might resemble the following situation: the American military notices near-peer Russia building up its capacity for hybrid warfare. Fearing risk, defeat in war, annihilation, or the loss of future deterrence capacity, the American military responds by pushing for doctrinal, institutional, and practical changes in preparation for hybrid warfare. In this situation, learning was compelled by changes in the threat landscape.

While realists largely agree that strategic pressures within the operating environment are the structural forces behind military learning, they disagree over the proximate causes of it. These disagreements can be separated into several categories based on how responsive each theorist believes the military is to the international system. In the first category, theorists

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[6] Kimberly Marten Zisk. *Engaging the Enemy: Organization Theory and Soviet Intervention* 1955-1991. *Princeton University Press*. 1993; Theo Farrell et al., "Introduction: Military Adaptation in War". Military Adaptation in Afghanistan. *Stanford University Press*. 2013

Kimberly Zisk and Theo Farrell argue that the military is sensitive to the international system and will respond directly to its changes.[7] Zisk has argued that military policymakers are not only bureaucratic entities, but state actors trying to pursue national security.[8] In this way, the military brass is directly impacted by security threats. The Russia scenario described above most closely resembles a Ziskian world. Russia, through its pursuit of hybrid warfare, now presents greater risk to national security, prompting the military to respond in kind. Farrell's perspective is broader than Zisk's. He claims that a number of factors in the international system may induce military learning, including changes in alliance structures, international norms, and domestic cultures.[9] Farrell argues the military is attuned to all happenings on the international arena, not just security threats.

In the second category, theorists Barry Posen and Deborah Avant argue that the forces of the international system can only indirectly impact the military. Rather, the international system affects civilian policymakers, who then impress changes upon the military. Thus, the civilian policymaker is the actor most directly attuned to changes in the international system and must be the change agent acting upon the military.[10] Thus, it is the civilian leaders who most saliently feel the pressures that push them to intervene and drive military doctrine forward. For Posen, who is writing in the context of great powers wars, these civilian leaders are preparing for high intensity conflict. Deborah Avant offers a similar process with a different ending: yes, the civilians are the

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[7] Zisk's argument here is quite similar to Posen's in Sources of Military Doctrine, except that for Posen, the civilian strategist feels the pressure of the international system rather than the military brass. Thus, Posen does not see the military as capable of reform without pressures from civilian policymakers.

[8] Deborah Avant on Kimberly Zisk, *Political Institutions and Military Change: Lessons from Peripheral Wars* (Ithaca: Cornell Univesity, 1994), 14-15

[9] Theo Farrell et al., "Introduction: Military Adaptation in War". Military Adaptation in Afghanistan. *Stanford University Press*. 2013

[10] In contrast to Zisk, who largely ignores the civilian 3rd actor.

ones who act as change agents for the military, but their efforts to instigate change are often undermined by the military itself. She cites civil-military relations under President Kennedy to illustrate this point, describing how Kennedy's efforts to micromanage doctrinal change in Vietnam were "undermined by Army personnel."[11]

Some realist theories refine prior models of military learning by highlighting how learning varies across organizations within the military, rather than viewing the military as a "monolith."[12] Each component of the military will face differing bureaucratic incentives and foster a unique culture, and therefore, the circumstances under which they learn and the amount of learning ought to vary. In underscoring these distinctions, Rosen proposes a number of ideas, including that individual components will vary in their sensitivity to threats and their ability to innovate when problems fall "outside of the parameters of established missions of concepts of operation."[13] For instance, the Air Force is more likely to learn in a heavy Air Power campaign than is the Army, just as the Navy is most likely to feel the pressure of Chinese aggression on the South China Seas.

However, these distinctions largely do not apply in Human Assistance/Disaster Relief (HA/DR) because no component claims these operations within its organizational purpose. Additionally, there are no monetary or ideological incentives for components to make HA/DR part of their organizational purpose. There is no budget specifically designated for HA/DR, and HA/DR frequently competes with components' original missions. In fact, components are actively disincentivized from pursuing HA/DR. Thus, among components with the equal HA/DR

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[11] Avant 1994, 405
[12] Stephen Peter Rosen, *Winning the Next War:Innovation and the Modern Military* (Ithaca: Cornell University Press, 1991); 18
[13] Ibid. 34

exposure, we would expect to see little variance in HA/DR learning. As components experience increased HA/DR exposure, we could logically predict higher amounts of learning. For example, we might expect a slightly higher degree of learning in the Marines than in other services because they are routinely called on to lead and execute HA/DR.

In sum, realists believe that the military learns when pushed by forces of the international system. These forces could be a security threat, international norm, or interstate competition. While these explanations are compelling, they falter when applied to disaster relief operations. These theories do not address how a military might learn when it is not used as a tool of war. Indeed, by assuming that international threats are the only catalyst of military learning, none of these theories can sufficiently explain how the military might behave when it is not preparing for armed conflict. In disaster relief operations, the threat of defeat and annihilation is absent at a number of levels-- soldiers are not afraid of losing their lives in battle, and the stakes are relatively low, operationally. There are no battles and no campaigns to lose in a disaster relief operation. And likewise, at the strategic level, there is no overarching war to lose, and little interstate competition regarding disaster relief operations.

This is not to say that there are not strategic interests in conducting disaster relief operations. Certainly disaster relief in the Asia Pacific falls under a broader grand strategy of engagement with the region. Similar levels of engagement can be produced by bilateral and multilateral training exercises, a cheaper and much more conventional option. However, these factors are largely removed from the operations and development of operational knowledge regarding disaster relief as a whole. Moreover, these theories imply there is not only an absence of incentive, but a disincentive for learning. These operations do not occur in a vacuum; they are

conducted alongside the training and execution for combat operations and thus distract from the military's core mission to fight and win the nation's wars. If forces from 3rd Marine Expeditionary Force are focused on a disaster response, they are not available for quick deployment. As long as training is focused on conducting disaster relief responses, it is not focused on preparing for war.[14]

The central question of this thesis is how the military learns in disaster relief operations. In this way, we are not merely interested in the military as a tool of war, but rather as an exceptionally robust bureaucratic organization with unique capabilities. Thus, these *realpolitik*-oriented theories are most useful in helping us understand why we ought to have low expectations for how much the military should learn at these operations. However, while the international system might provide some insight on how the military learns, these realist theories do not provide an exhaustive explanation for military learning in disaster relief operations.

The Bureaucrats

In contrast to the *realpolitik*-oriented approaches, some scholars point to bureaucratic or institutional politics to explain how, when, and why a military bureaucracy may or may not learn. In general, organizational theorists see military organizations as resistant to change (Allison 1999) (Halperin 1974). This model implies that, as learning theorist Janine Davidson notes, "even when various actors within a military organization desire a change...structural mechanisms would likely mitigate against it."[15]

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[14] To be clear, this is not to say that training is entirely siloed, that training for one operation does not have value in another operation. However, in general, training to fight looks different than training to deliver goods, recover bodies, repair homes, etc.

[15] Janine Davidson *Lifting the Fog of Peace: how Americans learned to fight modern war*, University of Michigan Press: 2010, 11

But clearly organizations do learn. As a result, three questions for bureaucratic theorists

emerge: 1) Under what conditions might a bureaucratic organization change? 2) What are the

driving forces behind this change? 3) What might this change look like? One answer could be the

bureaucratic agency's own desire to prove its importance as well as seek independence from the

larger bureaucratic regime.[16] Halperin articulates this dynamic, writing that bureaucratic officials

"attach very high priority to controlling their own resources so that these can be used to support

the essence of the organization."[17]

For instance, the Air Force ought to
be quick to innovate a
drone-centric counterinsurgency
strategy because the Air Force sees
itself as the primary provider of air
power in the American military. By
working to innovate a drone-centric
COIN, the Air Force confirms its
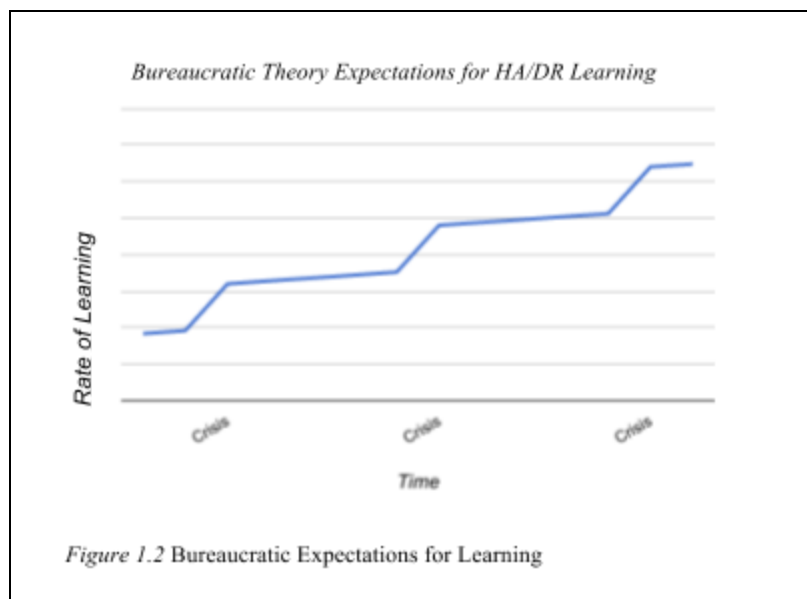
Figure 1.2 Bureaucratic Expectations for Learning

relevance, reaffirms its mission, and guarantees it budgetary as well as decision-making

privileges. According to organization theorists, these drivers of change are magnified in times of

salient incidents like sudden 'budgetary feast' and major 'performance failures' as well as

'prolonged budgetary famine.'[18] Such events raise the stakes for an organization, especially those

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[16] To be clear, this is distinct from bureaucratic competition as a driving force of change in that way that a bureaucratic organization may seek to reaffirm its mission even in the absence of a competing bureaucracy.

[17] Morton Halperin. *Bureaucratic Politics and Foreign Policy*. Washington: Brookings Institution 1974, 39-40.

[18] According to Allison, more money allows the agency to experiment and expand, inducing change, but famine puts added pressure on the agency reform in order to prevent further famine and possible extinction. Dramatic performance failures likewise add pressure to the organization, for after huge slip-ups the organization has to prove that it deserves a budget and a place in the bureaucracy at all.

that threaten it with extinction, and thus may drive it to reinvent itself or significantly change its course.

However, what is more likely, according to organizational theorists, is that bureaucracies will change gradually, slowly incorporating lessons of the past (Levitt and March 1988; Halperin 2006). Levitt and March explain this process of development, writing that organizations change incrementally "by encoding inferences from history into routines that guide behavior."[19] In this way, change is driven by small improvements overtime as experiences become ingrained in an organization's institutional memory.

If bureaucratic theory explains learning in HA/DR operations, we should expect learning over time to be consistent and incremental. Each operation should produce learning in small but steady bursts, with large shocks after the time of the disaster. This is because each disaster uncovers more problems that may be fixed in future operations. In practice, this would embody the incorporation of simple operational fixes rather than, say, large structural overhauls. For example, the military might note that ships A, B, and C will better serve future disaster relief operations than ships 1, 2, and 3, but it will not significantly change the existing HA/DR model. Figure 1-2 provides a graphical representation of what such learning could look like, driven by small, medium, and major operations.

While the organizational model is useful for understanding some facets of military learning, it is less useful in explaining why and how the military learns in HA/DR. This is because the three major drivers of organizational learning are not present in HA/DR. These

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[19] Barbara Levitt and James G. March, "Organizational Learning," Annual Review of Sociology Vol. 14 1988, 319-340.

drivers are: 1) bureaucratic competition, 2) budgetary incentives, and 3) a mission-reaffirming operation.

Indeed, there is little evidence to suggest that military learning in these operations was motivated by any of the aforementioned drivers. Indeed, the desire to hold more bureaucratic influence or secure existential status appear largely unrelated to HA/DR. This occurs for several reasons. First, services do not compete to conduct these operations, especially in the Asia Pacific where the Marines consistently and reliably lead operations. Services do not want to divert resources from other training, lose fungible funding that could be utilized elsewhere, or

Figure 1.3 Maverick Theory Expectations for Learning
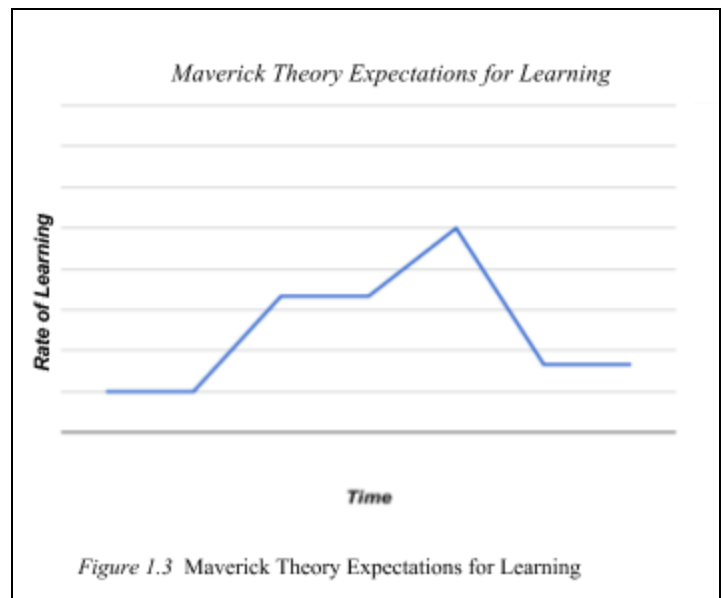
voluntarily undertake a task for which they will not receive additional funding. Even if services wanted to compete, it would be nearly impossible to challenge the Marines' amphibious capabilities. Second, budgetary incentives are not present for HA/DR missions because it is not a resourced or funded task of the military.[20] Last and relatedly, disaster relief does not affirm or advance the military's core mission. As COL(ret.) Martin, Director of the Center for Excellence, rather humorously put it, at the end of the day "the purpose of the military is to kill and break things. We get resourced to execute *that* mission [not disaster relief]."[21] Simply put, the U.S.

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[20] Joseph Martin. (2017, January). Personal interview.
[21] Ibid.

military in the Asia Pacific from 2004-2015 did not try to use disaster relief as a justification for expansion or improvement of certain units or services."[22] Yet despite all of these obstacles, significant improvements in disaster relief occurred over that period. Therefore, we must look to other theories of military learning to explain why and how the military has learned in disaster relief operations.

The Culturalists

While bureaucrats focus on the structure of bureaucracy, culturalists are concerned with the culture of bureaucracy (Builder 1989). According to these theorists, military culture--or institutional military 'personality'-- has a tendency to be hostile to learning. Military culture is often seen as especially hierarchical and conservative. This represents a key point of departure between bureaucrats and culturalists: while bureaucrats view military institutions as decelerating learning, culturalists see these structures as actively inhibiting learning (Nagl 2002). Nagl describes how this culture of inhibited learning manifested itself in the American military in Vietnam. He contrasts the American military culture with that of the British military and the Central Intelligence Agency (CIA).[23] For Nagl, the differences are black and white: where the British and the CIA recognize that change and innovation are good, the hierarchical, traditional U.S. military, led by "conventionally-minded powers," rejects it.[24]

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[22] Given all we know of the budgetary and strategic outlook over the course of those years, this makes sense. Between a general pivot to Asia and increased geopolitical competition, the U.S. military had numerous other priorities more closely aligned with its primary task of warfighting.

[23] Nagl highlights how the American military and its top brass remained married to conventional warfighting techniques despite their failure in Vietnam but the CIA welcomed innovation, developing new ways of fighting like in the Civilian Irregular Defense Group.

[24] John Nagl, *Learning to Eat Soup with a Knife*, 128.

So -- according to culturalist theories, how can the military reform itself? One answer is "maverick theory." Change evolves through the changemaker, such as a maverick officer, who is willing to fight against this traditional culture. History is ripe with examples of such changemakers, such as Petraeus and the 101st in Iraq, who wrote FM 3-24 or Special Forces officer MAJ Jim Gant, who rallied for a change of strategy in Afghanistan in his white paper "One Tribe at a Time."[25] Gant's ideas on how to improve security cooperation in Afghanistan influenced decisions of top military and political leaders.[26] Rosen also notes the potential influence of an individual changemaker, citing Charles de Gaulle and B.H. Liddell Hart as common examples of 'mavericks' who pushed "tradition-bound organizations to innovate."[27]

If maverick theory explains learning in HA/DR operations, we should expect learning to be remarkably inconsistent and unpredictable. This is because maverick theory relies on individuals to drive learning in their organization. To illustrate this point, it is useful to return to our example of General Petraeus in Iraq. Petraeus' unit, the 101st, was learning at a rapid pace and adjusting successfully to the insurgency, unlike other divisions. In that situation, learning relied wholly on one changemaker -- General Petraeus -- and thus was discontinuous, idiosyncratic, and non-cumulative. In HA/DR, this process is illustrated by sharp increases in learning, followed by long periods of relapse. The amount of learning will exhibit extreme variation as individual leadership is both the catalyst and the driver of this learning. What this learning ought to look like is depicted by *Figure 1.2*. Note the steep changes in slope as learning accelerates and then drops off, often resulting in a cumulative loss of institutional knowledge

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[25] Jim Gant. 'One Tribe at a Time'. Nine Sisters Imports, Inc. 2009; David Wood. "In Afghanistan, A U.S. Special Forces Major's Meteoric Rise And Humiliating Fall" 28 March 2014.
[26] Ibid.
[27] Stephen Rosen. *Winning the Next War,* 12.

Culturalists believe the military can increase its capacity to learn by fostering a culture of learning. To encourage such an environment, Nagl emphasizes that the military must incorporate a culture of critique into their organizational ethos. He acknowledges that doing so is extremely difficult in hierarchical organizations with conservative cultures. Yet it is not impossible; Nagl notes that the more horizontal CIA and British military have successfully cultivated an emphasis on learning whereas the American military has not.

Despite the learning mechanisms put into place since the Vietnam War , conventional wisdom still maintains that the American military is not a learning organization.[28] Some point to Iraq and Afghanistan as examples of this pervasive culture, where the military's failure to learn from the mistakes of past small wars doomed its mission to failure. Others point to a general trend of anti-intellectualism and a culture that privileges mediocrity over excellence as two major reasons the American military remains stuck in the mud.[29] While such depictions of the military's culture may be extreme, they are rooted in truth; an extremely hierarchical system creates a disincentive to critique plans disseminated from higher-ups, and the military's structures reward "checking the box" rather than generating new ideas.[30] Given this representation of military culture, culturalists should not expect the military to learn in disaster relief operations, or even in most operations.

Another weakness of culturalist theory is its implication that a bureaucracy structurally averse to learning cannot create a learning culture. However, this thesis argues that the military

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[28] Rosa Brooks, "Knife: A Memoir of Modern War in Theory and Practice, by John Nagl," *The Washington Post*, 18 November 2014.

[29]Thomas Ricks, "General Failure" *The Atlantic*, November 2012.

[30]Roxanne Bras, "Army Officer: I think I know why those departing Marine LTs wrote anonymously" *Foreign Policy,* 7 January 2013.

has indeed established an ethos of learning and organizational improvement that manifests itself *despite* its bureaucratic tendency to stymie change. Institutional learning mechanisms create constructs that force formal processes of learning and incentivize informal processes. These processes demonstrate the military's ability to incorporate certain experiential and cross-operational lessons without external pressures.

In sum, each of these theories predicts that military learning in disaster relief will be difficult. Although these theories provide insight into the military learning process under typical conditions, none advance a convincing explanation as to why the military might learn in non-typical conditions like disaster relief operations. The realists assume learning will not occur without the pressure of a salient security threat; the bureaucrats do not address situations where an organization might learn by operating outside of its organizational purpose and in the absence of budgetary incentives; and culturalists do not address how an organization, while characterized by tradition and conservatism, might promote an indigenous learning culture without constant injections from maverick leadership. Thus, none of these theories explains why and how a military might learn in the absence of these drivers of change. And finally, none of these theories explains how a traditional, conservative, and hierarchical military might foster an ethos of learning nonetheless. In order to understand how the military might learn in disaster relief operations, we must first explain this institutionalization of learning and how this process may promote and sustain a culture of learning.

An Institutionalized Learning Culture

This thesis argues that even a military that is slow to learn will learn through the employment of institutional learning mechanisms. These institutional learning mechanisms ingrain learning as a habitual practice, allowing learning to occur even under unfavorable or hostile conditions. In so many words, the military is teaching itself to adapt to new situations -- it is learning how to learn. I label this habitual "learned" learning a "learning ethos."[31] The effect of this learning ethos is twofold. First, this learning ethos enhances the inputs of formal institutional learning mechanisms and produces better outputs (i.e. learning). Second, this learning ethos creates a culture of informal learning that emphasizes and rewards operational experience, individual reflection, and collective reflection through professional and social 'networks of experience.'[32] This learning ethos produces powerful institutional incentives for learning via these formal and informal channels.

What are these institutionalized learning mechanisms? Broadly, this term references processes and institutions designed to generate lessons to be learned. These institutions force formal learning, at least to some extent, by requiring the collection, consolidation, and distribution of professional and operational feedback. These institutionalized learning mechanisms propel formal learning to completion, with an end result of new/updated doctrine, institutions, and practices.

What is formal learning? Formal learning is the process(es) generated by institutionalized learning mechanisms. The process of formal learning is practiced, deliberate, and often mandated by military policy. The most obvious indicator of formal learning within the

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[31] Robert Axelrod, *The Evolution of Cooperation*, Basic Books, 1984. It is worth noting that this theory has similarities to Robert Axelrod's theory on cooperation, which argues that actors may cooperate upon learning that it is evolutionarily advantageous. According to Axelrod, once organizations learn to cooperate, they prefer cooperation. Likewise, the military has learned to learn and will continue to learn.
[32] Recall that culturalists say that the military lacks this ethos.

military is the conducting of an After Action Review (AAR). The AAR is a structured debrief and collective reflection process used to analyze an event and propose recommendations for future training and operations. These formal learning processes are expected to culminate in the production of formal products, often indicated in changes in institutions and doctrine. While the products of formal learning are often not specifically required, they are usually expected based on best practices or precedent. These expectations generate an institutional consistency in the production of reports, doctrine, and institutions.

Due to the stability of these institutionalized learning channels, learning should resemble an incremental accumulation of lessons overtime, with small dips and bumps from troubleshooting and simple fixes. In a situation with only formal learning at work, we would expect learning to mimic the model proposed by bureaucratic theory. Learning should be incremental, heightened by remarkable events (e.g. natural disaster responses), and the amount of learning should correspond directly to the number of problems encountered during the mission.

In this way, formal learning is necessarily reflective: the process responds to actual, experienced events, so formal learning mechanisms can only fix problems that have happened in the past, rather than anticipating those that will happen in the future.

What is informal learning? Informal learning is learning that occurs outside of formal channels. Informal learning is a product of a learning ethos, rather than the result of an action directly instigated by institutionalized learning mechanisms. An effective learning ethos prompts learning outside of structured channels, with larger social and professional rewards as learning becomes habitual and instinctive. Indicators of informal learning include individual attention to personal and collective experience, as well as experience-sharing through professional and social

'networks of learning'. Informal learning relies on the presence of experienced individuals, and therefore we should expect this process to be fragile, sporadic, and non-cumulative. But at the same time, informal learning might also be more salient and have a stronger effect on actual practices.

What are the differences between formal and informal processes of learning, and how do they interact? At a basic level, formal learning offers consistency. As long as institutionalized learning mechanisms are in place, formal learning will occur at some level. But, this learning may be inadequate or ineffective. Informal learning, on the other hand, provides lessons with greater relevance and stronger staying power, but will emerge on an inconsistent basis. When both processes work together, we should expect a synergistic relationship to propel learning over time. Informal learning augments the interpretation and implementation of formal learning, which, in turn, strengthens the formal learning process and leads to better formal learning products. As individuals gather knowledge --"lessons learned"— through personal experience and the experiences of others, the inputs of formal learning processes will be enhanced. Therefore, when working in tandem, we should expect formal and informal learning to increase total learning in a nonlinear fashion. [33]

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[33] Caitlin McCarey (Wellesley '17) helped conceptualize and create this graph.

Formal and Informal Processes of Institutionalized Learning
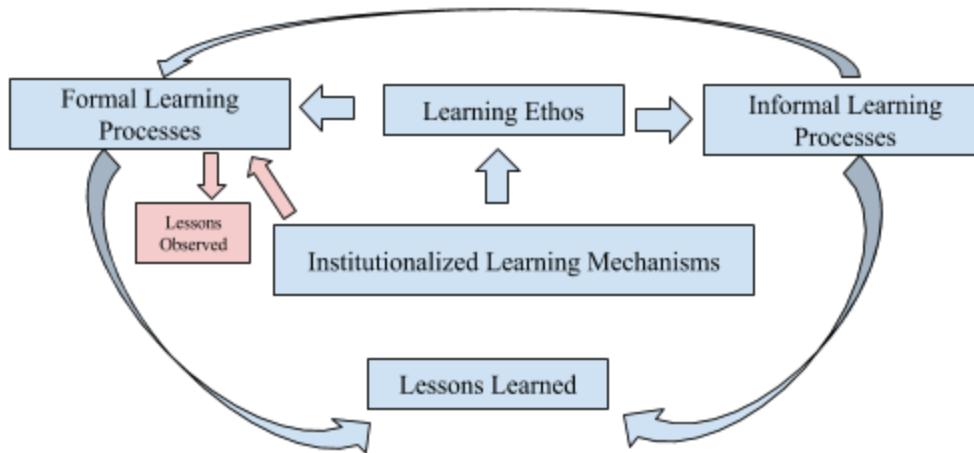
Figure 1.4, How Informal and Formal Learning Processes Interact

Caveats: This flowchart depicts how different aspects of the learning process interact with one another. It assumes that institutionalized learning mechanisms put into place roughly after the Vietnam War have generated an ethos of learning. It is likewise important to note that this graph depicts how learning might occur in the context of a crisis event, an exogenous shock, rather than learning at all times.

Description: As depicted above, institutionalized learning mechanisms generate a formal learning process even in the absence of a learning ethos. However, without this learning ethos, the product is observations-- half-lessons-- rather than lessons learned. When it generates a learning ethos, institutionalized learning mechanisms filter through the informal and formal processes to produce lessons learned. Note that informal processes can either generate lessons learned directly, or it may be inputted into formal learning processes, enhancing learning

Institutionalization Theory Expectations for Learning
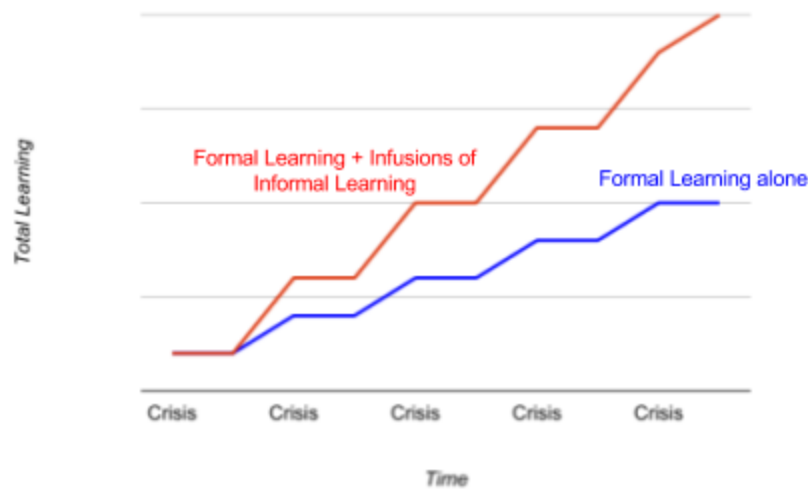
Figure 1.5 Informal + Formal Learning = Improved Formal Learning

Institutionalization theory builds on the argument proposed by Janine Davidson in her book *Lifting the Fog of Peace.* In her conclusion, she proposes that institutionalized learning structures can force the military to learn. She grounds her argument in the same literature on organizational and military learning examined by this paper.

This theory differs from and expands upon Davidson's thesis in a number of ways. Significantly, Davidson's method fails to disentangle the institutional learning process from other incentives to learn. Although Davidson does exceptional work in explaining how institutional mechanisms may force both formal and informal learning processes, her work falls short of explaining how these institutional mechanisms may work *in spite of* the absence of traditional incentives to learn. Davidson grounds her analysis in case studies of the war in Iraq, where most of the traditional incentives to learn were at play. Recall these incentives include high geopolitical threat, budgetary feast, and major shocks arising from significant military failures. The presence of these factors in Iraq, according to realist and organizational theorists, should incentivize military learning even in the absence of institutional learning mechanisms. Institutionalization theory, on the other hand, largely isolates the institutional learning process from traditional incentives and provides explanations for learning by examining how the military behaves in disaster relief operations.

Davidson's analysis also overlooks the limitations of institutional mechanisms as drivers of learning. I will demonstrate that by relying on past experience to drive the learning process, these institutions are necessarily retrospective rather than anticipatory. In this way, the military

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can quickly and impressively resolve problems experienced in past operations, but cannot effectively foresee or prevent future hazards.

Institutionalization theory also shares several key characteristics with bureaucratic theories. For one, bureaucratic structure matters. The design of an organization will significantly affect its processes and the potential outcomes it can achieve. Just as adherence to standard operating procedures (SOPs) and heavily hierarchical structure affect output, I also argue that institutional structures designed to produce change also affect potential outcomes. However, this theory diverges from the bureaucrats in quantifying and describing what institutions do to the learning process. While the bureaucrats view institutionalized practices as conveniences for procedure but impediments to learning (e.g. functionality of SOPs), I argue that institutionalized practices geared toward learning will, in fact, drive it. Further, just as bureaucrats believe bureaucracies evolve slowly, institutionalization theory argues that change is likely to occur incrementally in disaster relief operations. Therefore, we should not expect large overhauls in doctrine, institutions, and practice for military learning, but rather limited troubleshooting and simple fixes.

Additionally, this theory shares characteristics with the culturalists. For one, it understands how bureaucratic structure manifests itself in an organizational culture. This culture will create an ethos that affects how tolerant and supportive of learning the organization is. My argument emphasizes the importance of such an organizational culture, diverging from that of the culturalists in its view of learning culture. Nagl assumes that hierarchical, conservative, and traditional organizations cannot be learning organizations; my theory argues that an organization

can possess *all* of these characteristics: the American military can be hierarchical, conservative, and traditional while also having a developed ethos of learning.

In sum: how does the military learn in disaster relief operations? The answer, I propose, lies in the synthesis of bureaucratic and culturalist theories of organizational learning. Conceptually, we may apply the metaphor of a runner training for the Boston Marathon. Even when she goes for a simple jog, the hours she has spent perfecting her stride will positively affect her form. In other words, even when she is not actively trying to apply her marathon training, such training becomes so ingrained it is applied unconsciously. In the same way, when members of the military comply with bureaucratic requirements for learning, these requirements produce in some soldiers an ability and desire to learn even when operating outside of these requirements. In the metaphor of the marathon runner, the institutional mechanisms are the official marathon training, which are "mandated" for those who run a marathon. Formal learning is the development of good form while officially training for the marathon. The learning ethos is created when the good form learned during marathon training spills over into casual jogs or warm-up exercises. Returning to the context of military operations, soldiers who learn via mandatory institutional learning channels may export their knowledge into new and different situations. The exportation of this knowledge from one situation to the next is what I have labeled an ethos of learning.[34] In the next section, I apply this definition to measure learning in disaster relief operations.

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[34] Caitlin McCarey (Wellesley '17) developed this metaphor in honor of Patrick Hamon's marathon run (Tufts '16).

Figure 1.6 Expectations for Military Learning

Theories	Characterization of the military	Expectations for learning	Conditions for learning	Expectation for learning in HA/DR
Realist	Tool of war, sensitive to international politics	Neutral	High threat environment	Low
Bureaucratic	Slow bureaucracy, favors status quo	Low, incremental	Times of unusual budgetary pressure/bureaucratic competition	Low
Culturalist	Slow bureaucracy exacerbated by a particularly traditional, conservative culture	Poor	Maverick officer, built-in culture of critique/learning	Low
Institutionalization	Traditional, conservative bureaucracy	Neutral	Institutionalized learning culture	High

Methodology: Measuring Learning

This thesis tests institutionalization theory by examining three case studies of military-assisted disaster relief operations and measures changes in learning from each disaster. I sought to track the effects of multiple varying independent variables on the dependent variable of learning, as indicated by changes in doctrine, institutions, and practice. These independent variables include threat environment, bureaucratic context, organizational culture, and institutionalized structure in order to test realist, bureaucratic, organizational, and institutionalization theories, respectively.[35] We should see both the amount and type of learning produced from the shock of each disaster to correspond to these independent variables.

If realist theories are correct, we should see a positive correlation between threat environment and amount of learning. The higher the threat environment, the more learning we

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[35] This structure includes a number of different mechanisms. Examples include the after action review process; Joint Lessons Learned Information System; the Center for Army Lessons Learned; the Marine Corps Center for Lessons Learned; the Navy Lessons Learned System; Air Force Knowledge Now; Training and Doctrine Command; the National Training Center; the Center for Excellence in Disaster Management; the Peacekeeping and Stability Operations Institute; and doctrine outlining the After Action Review process.

should expect to see emerge from each of these disasters. If bureaucratic theories are correct, we should expect to see a positive correlation between variables that bureaucrats say trigger learning and learning itself. These include budgetary feast, budgetary famine, or bureaucratic competition. If culturalist theories are correct, we should expect to see a correlation between individual leadership actions and learning. We would see data subscribing substantial changes to certain individuals and their leadership ability. Similarly, culturalists would expect different levels of learning even within the same services as naturally some leaders perform better than others at instilling a positive learning culture. If institutionalization theory is correct, we should expect to see a correlation between learning mechanisms/processes and amounts of learning. These learning mechanisms include: formal and informal learning processes and the presence of a learning ethos.

Why is it reasonable to measure learning across crises events, which are highly varied? While these events look highly varied on the surface, the military's role remains relatively constant throughout each of them. In each of these disasters, the military is tasked with a support role, to assist and support a whole of government response with its unique capabilities, which include logistics, manpower, and leadership. This role stays consistent across disasters of similar size and impact. I attempt to maximize and reinforce these consistencies through the cases that I chose.

I examine two case studies of military disaster relief missions in the Asia Pacific region-- 2004 Operation Unified Assistance and 2011 Operation Tomodachi. Additionally, I will look at the 2013 and 2015 operations in the Philippines and Nepal, respectively, but in a way that focuses on the events themselves, rather than the lessons drawn from the events. Each of these

cases is of similar scale and impact, inducing a similar response from the American military. Further, I have chosen to focus on the Asia Pacific region in order to control for external variables, like changes in combatant commands. All military operations in the Asia Pacific are planned out of Pacific Command (PACOM) and during this period, the geopolitical threats in the region remained relatively constant, unlike geopolitical threats in other areas such as the Middle East. Additionally, many of the same component forces are deployed in each of these disasters out of PACOM. My two case studies are the 2004/2005 tsunami in Indonesia and the 2011 Triple Disaster (earthquake/tsunami/nuclear disaster) in Japan. I also touch on the 2013 Operation Damayan in the Philippines and the 2015 response in Nepal at a surface level, while analyzing learning post-Tomodachi, but I do not investigate learning from these crises.

My first case study examines the Operation Unified Assistance (OUA) response to the 2004 Indian Ocean tsunami in Indonesia, Sri Lanka, and Thailand. Rather than choosing an earlier disaster response, like the major 1991 Sea Angel response in Bangladesh, I chose to ground this analysis within contemporary disasters and for consistency of doctrinal context. After the attacks on September 11, 2001, the military underwent severe ideological and physical restructuring. Most contemporary responses have been conducted in this post-9/11 military, and the 2004 OUA was the first major response executed under the military's new posture. Because the disaster and response alike were massive, we should expect many complete lessons to emerge from it. The next case study is another major disaster of similar levels of destruction and disaster -- the U.S. response to the 2011 Triple Disaster in Japan, Operation Tomodachi. If the military managed to learn lessons completely in the 2004 OUA, we would expect to see those lessons reflected in the 2011 response. Therefore, I use this mission as a test to determine what

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was and what was not learned from OUA. I also use Operation Tomodachi to measure learning for a second time. Because Operation Tomodachi was, like OUA, a massive response, I anticipate that it induced a similar amount of lessons and learning alike.

The next challenge is setting a baseline level of learning that will occur in general. Overall, we should expect military learning in these events to be present but underutilized; lessons are noted by soldiers on the ground and passed up the chain of command, but they are not incorporated into significant doctrinal, institutional, or practical changes. This baseline is derived from accounts of actual military learning during the small wars prior to the conflicts in Iraq and Afghanistan. Before Iraq and Afghanistan, the lessons collected in the context of small wars had failed to culminate in joint doctrine, institutions, or training. Lessons from Vietnam were noted, and some low-level doctrine were produced (particularly by the Marines), but until the insurgency in Iraq pressured the military to reform, substantial learning in small wars did not take place.

To develop a clear picture of disaster relief operations, I gathered data from two primary sources: military reports and interviews with practitioners of disaster relief. I interviewed over 40 officials from United States Pacific Command in Honolulu (PACOM), United States Agency for International Development (USAID), the Center for Excellence (CFE), the Department of State, relevant nongovernmental organizations (NGOs), as well as scholars of disaster relief and crisis management. A full list of interviewees is annexed at the end of this paper. I also analyzed After Action Reports (AARs) from USPACOM and deployed forces like 3rd MEB, USAID, and NGOs. Additionally, I gathered open source data, primarily from other research organizations like RAND and news reports on crises. One significant benefit of studying disaster relief

operations is that almost all the relevant data is unclassified. Thus, officials were able to speak more candidly with me than they would otherwise be able to. Additionally, all the AARs and documentation on this data is unclassified; anyone with a government common access card may access and review this information. Therefore, I am confident my data provides an accurate snapshot of what occurred during these missions.

That said, my data has at least two potential limitations. First, natural disasters are notoriously difficult to study and compare over time. Each disaster brings a host of unique issues that may affect the way any one particular response is conducted. For instance, a disaster in Indonesia is going to look quite different than one in a developed, wealthy country like Japan. While I attempt to control for dramatic differences by studying disaster responses conducted out of the same combatant command, of similar scale, and within ten years of one another, I understand that that random uncontrollable variables may have affected observations. Further, while disasters themselves are unique, the military's role in these responses are relatively consistent: the military provides 'unique capabilities' in a disaster, usually in the forms of logistical support and manpower. Second, it is difficult to disaggregate precisely who/what organization is doing the learning after these disasters because they are huge interorganizational undertakings, whole of government responses. It is thus at times murky to judge precisely from where these changes emerged. In this thesis, I have sought to mitigate this problem by focusing on the military's role and changes, rather than larger changes (e.g. I am not interested in the changes that the UN made to its response after the 2004 Indian Ocean tsunami).

This thesis proceeds as follows in order to test institutionalization theory and express findings: To begin, I offer an overview of the U.S. disaster relief response protocol. This will

familiarize the reader with the highly complicated, messy process that occurs when the U.S. government initiates a disaster relief response. Next, I review past literature on military learning. In chapters two through four, I explore and analyze three different case studies of military-led disaster relief operations. Case I is the 2004 Indian Ocean Tsunami Response, Case II is the response to the 2011 Triple Disaster in Japan. The penultimate chapter examines how other combatant commands handle disaster relief operations and highlights the implications of these responses. Finally, I conclude with a brief summary of findings and suggestions for future analyses.

Chapter II
The Military's Role in Disaster Relief

This brief chapter provides important context for the remainder of this thesis by explaining the military's role in disaster relief operations led by the U.S. Government.

The United States Agency for International Development (USAID) is the lead agency in disaster relief operations. In particular, USAID's Office of Foreign Disaster Assistance (OFDA) prepares for, helps to coordinate, and leads all U.S. government disaster relief missions. OFDA responds to dozens of natural disasters each year, most of which are small-scale disasters. The military is traditionally only called to assist in major natural disasters, when USAID is overwhelmed and in need of logistical support and additional manpower. In the wake of a disaster, protocol dictates that the host nation should request support from the U.S. government through its American ambassador. The ambassador will then request assistance from OFDA, who requests assets from the DoD in D.C., and the DoD there finally issues the order to the appropriate combatant command. In many cases, this process faces complications or is otherwise delayed, but in general, these are the formal mechanisms in place to coordinate the U.S. response to international natural disasters.[36] If military commanders near the "immediate scene of a foreign disaster" determine that urgent action is required, they may act unilaterally and secure "approval for continued assistance" within 72 hours.[37]

The U.S. responds to approximately 70-80 disasters per year, and most of these operations are conducted by USAID alone. Of these annual disasters, the DoD is traditionally

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[36] Charles M. Perry and Marina Travayiakis, "The U.S. Foreign Disaster Response Process," *The Institute for Foreign Policy Analysis, Inc.* May 2008.
[37] Jennifer D. P. Moroney et al., "Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region," RAND Corporation, 2013.

called to support about 10-15 percent of them.[38] Although the number of disasters with DoD involvement is small compared to the number of U.S. disaster responses per year, most of the disasters supported by American authorities are of remarkable magnitude. As former Deputy Assistant Secretary of Defense for Partnership and Stability Operations James Schear writes, "This is largely due to the unique contribution our military can make to these types of responses. Capabilities such as strategic airlift, expeditionary medical care and engineering enable the USG (U.S. Government) to provide quick support to affected countries in the immediate aftermath of a devastating disaster."[39] Manpower is also a critical asset that the U.S. military can bring to the table whereas others cannot.

Indeed, as mentioned above, the primary role of the American military is one of support and assistance to authorities. This assistance enables and augments the capabilities of other U.S. government and foreign actors: USAID, local civil society organizations, foreign NGOs, and the host nation's own military. The support provided by the military is critical for an effective disaster response in a devastated area. Its capabilities allow for the movement of goods and coordination of people across places where all means of transportation and communication have been destroyed. In this way, the military acts as both glue and grease: holding together a large disaster response while enabling the smooth execution of concurrent operations.

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[38] "Department of Defense Support to Foreign Disaster Relief: Handbook for JTF Commanders", 13 July 2011.
[39] Ibid.

Chapter III
Operation Unified Assistance and Simple Fixes

"In 2004, we saw the disaster on the news and thought 'oh we're going somewhere'. The DoD is going to respond to this because no one else can. No one else can bring what we can bring."[40]

-Colonel (R) Douglas Sevier, Deputy Commander 374th Operations Group, PACAF C130 Commander in Operation Unified Assistance

Introduction

The goal of this chapter is to set a baseline for military learning in order to test our theories of military learning.This chapter argues that the military learned from Operation Unified Assistance despite the absence of traditional incentives to learn, and that institutionalization theory best explains this learning. In order to accomplish this task, I first provide an overview of the disaster and the American military response, followed by an analysis of key operational successes and shortcomings. Second, I identify institutional and doctrinal changes that were incorporated as a result of this disaster. This demonstrates how the military learned from this operation despite an operational environment that, by traditional standards, is adverse to learning. Finally, this chapter concludes by looking forward toward the second case study, Operation Tomodachi, in 2011. In that chapter, we will see how these changes from OUA were incorporated into operational practice.

The Disaster and Operation Unified Assistance

On December 26, 2004, a magnitude 9.3 undersea earthquake erupted in the Indian Ocean off the coast of northern Sumatra, Indonesia. The earthquake triggered a wave of tsunamis, destroying large parts of Indonesia, Sri Lanka, Thailand.The force of the earthquake

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[40] Douglas Sevier. (2017, January). Personal interview.

and the resulting tsunamis were felt throughout South and Southeast Asia, and down the

northeastern Africa coast in Kenya, Somalia, and Tanzania. Over 150,000 people died in the

immediate aftermath. Within hours,then-President George W. Bush publicly expressed his

support to the affected communities. Within days, he pledged to contribute $350 million in aid.

But even before receipt of orders, U.S. soldiers and sailors began to respond. Joint forces

at PACOM headquartered at Camp Smith in Honolulu, Hawaii, began assembling what became

Combined Support Force 536. These forces, later called the Combined Task Force[41], began

planning the largest natural foreign disaster response in America's history -- Operation Unified

Assistance. Because of its strong presence in the Pacific, amphibious capabilities, and experience

in disaster relief, Marine Forces Pacific took the lead in this humanitarian assistance/disaster

relief operation. The Marines, in turn, assigned III Marine Expeditionary Force as the core JTF

staff to lead the relief effort. This means that the Marine Forces Pacific was responsible for

supporting the chain of command for the operation, and for keeping control of the operation all

other participating military services, e.g. U.S. Pacific Air Forces, reported to Marine Forces

Pacific.

PACOM's official mission was to provide "assistance to the governments of Indonesia,

Sri Lanka, Thailand and other affected nations to mitigate the effects of the recent earthquake

and tsunami in the Indian Ocean."[42]

On December 27th, one day after the disaster, U.S. Ambassadors to Indonesia, Thailand,

Sri Lanka, and the Maldives issued disaster declarations. This prompted the military to quickly

deploy a strike group spearheaded by the carrier USS Abraham Lincoln, a seven-ship

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[41] The name of the JTF was changed to the Combined Support Force CSF later in the operation.
[42] Operation Unified Assistance, Pacific Command General PPT, provided by Admiral Thomas Fargo.

expeditionary strike group led by the USS Bonhomme Richard, and the hospital ship USNS

Mercy. Within 72 hours of the disaster, U.S. aircrews were delivering the first load of relief

supplies -- primarily research and rescue teams, food, water, and medical equipment -- into the

area. By the end of the first week in January, the "American military deployed over twenty-five

Navy ships, forty-five fixed-wing aircraft, and fifty-eight helicopters" and had delivered over

610,000 pounds of water, food, and supplies to the region.[43] The American military assisted

efforts in Indonesia, Thailand, Sri Lanka, and the Maldives.[44]

Like previous disaster relief operations, Operation Unified Assistance (OUA) was

conducted in support of host nation operations and, on the U.S. government side, in support of

USAID. Six USAID disaster assistance response teams (DART) deployed to Thailand

immediately, eight DART members to Sri Lanka, later joining a part of a large 40-person

regional USAID/DART team.[45] DART team members are experts in disaster relief, and they

coordinate and advise the U.S. government's response to a disaster. The American whole of

government response also had significant help from other world actors, with participation from

affected countries as well as 21 other nations. In total, partner nations lent 92 airplanes, 103

helicopters, 102 ships, 18 medical teams, 2 logistics teams, and 10 engineer teams. The U.S.

itself lent 45 ships, 57 airplanes, and 25 helicopters. Additionally, hundreds of local and global

NGOs rushed to give support to the area. A multi-country DART team was also employed.

Coordination among participating nations largely fell upon the U.S. military because of its

capabilities and familiarity with logistical operations.

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[43] Bruce A. Elleman, "Waves of Hope: The U.S. Navy's Response to the Tsunami in Northern Indonesia," Naval War College Press, February 2007.

[44] The Center for Excellence in Disaster Management,"Lessons from Typhoon Haiyan" *The Liaison, A Journal of Civil-Military Disaster Management & Humanitarian Relief Collaborations*, Volume VII, (Spring 2015), p 14

[45] USAID, "INDIAN OCEAN -- Earthquake and Tsunamis," Fact Sheet #4, Fiscal Year 2005

The role of the American military in OUA, as per usual, focused on logistical assistance, coordination, heavy lifting, providing airlift, transportation, search and rescue, aid delivery, and personnel transport to both orchestrate and conduct these exercises. The military also assisted and coordinated other militaries, USAID DART teams, local government relief forces, and NGO volunteers. In total, JFACC operations moved over 75% of all air-delivered goods and services. These operations lasted for about two months.[46]

The global community and the military itself heralded OUA as a successful operation. As former PACOM commander Admiral Thomas Fargo recalled, "this will go down as one of the worst natural disasters in our history. But it will go down as one of the international community's best collective efforts in the support of humanity."[47] The military reacted with speed and efficiency, delivering the first round of supplies just days after the tsunami struck. Admiral Fargo recalls that upon hearing of the disaster on the news, they immediately began to plan a response and had developed a concept of operations even before they had been called upon by OFDA to do so.[48] Previous SOPs created by the Cobra Gold disaster relief exercise allowed them to easily choose Utapao as the command headquarters and the Marines as the lead response team. Post-operations data collection appeared to confirm these were successful decisions: one survey found that as many as 65% of Indonesians held a more favorable view of the U.S. after the conclusion of the operation. In total, military delivered over 24 million pounds of relief supplies and performed almost 20,000 medical procedures, saving countless lives.[49]

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[46]On January 22nd, support groups and ships began standing down and on February 12 the JTF 526 ended operations
[47] Thomas Fargo. (2017, March). Telephone interview.
[48]Thomas Fargo. (2017, March). Telephone interview.
[49] Eben Kaplan, "Tsunami Rebuilding Efforts, One Year Later," *The Council on Foreign Relations,* 22 December 2005; Andrea H. Cameron, "The Legacy of the 2004 Indian Ocean Earthquake and Tsunami on U.S. Maritime Strategy," CIMSEC, 1 April 2016

Shortcomings and Lessons to be Learned

In this section, I will highlight some of the key deficiencies with the operations and highlight patterns among them. I argue that from these problems emerges a trend of lack of preparation, and that at the time of OUA, the military conducted HA/DR in a reactionary rather than anticipatory manner. In the subsequent chapters, we will see that the military learned to become an anticipatory force. This section begins by unpacking some of the major problems and analyzing why they occurred. Then, it describes the type of learning that occurred between Operation Unified Assistance and our second case, Operation Tomodachi.

As previously stated, at the time of OUA, the military performed HA/DR operations in a reactionary manner rather than an anticipatory one. While it is true that natural disasters and their effects are largely unpredictable, the problems encountered in OUA may have been mitigated by developing a tentative plan.

The confusion and inconsistency in the distribution of goods during OUA illustrates the military's reactionary posture and the problems that posture can create. The military had no standard way of measuring the effectiveness of its distribution plan, as in which goods were getting where they need to go and how fast. Lack of planning resulted in both meaningless measurements and inconsistent means of measurement across various parts of the chain of command. Some teams initially used sorties (a sortie is one operational flight made by a single aircraft) to measure effectiveness, but, as the AAR notes, "sorties are a relatively meaningless [measurement]," because they measure input rather than output and their relative sizes and

carrying capacities vary dramatically. Other teams tried to measure number of pounds of food delivered per person per day as correlated with capacity for movement. The joint command cell used pounds of goods delivered to specific locations.

In addition to measuring goods, distribution plans themselves were only partially developed. While the military demonstrated incredible speed and effectiveness in its reaction, it is unclear whether the distribution system in place was the best one. Colonel Sevier noted this point, saying that the military in OUA "lost track" of distribution efforts, failing to assess whether or not goods actually got to the victims who needed them. He emphasized, "*Flow* matters just as much as speed and quantity of goods [in providing relief]."[50]

Two other problems illustrate the reactionary nature of this operation: the confusion about C2 relationships. According to AARs, the operation suffered from a delay in establishing "clear and unambiguous command relationships," which hindered efforts, particularly distribution efforts, for weeks.[51] Rather than creating a unified command, the joint task force headquarters in Thailand established four separate subcommands for air assets and air distribution. None of these subcommands were required to synchronize their operations with the delivery of relief supplies. These command problems resulted in the severe backlogs of material on limited airfield ramps.[52] And in this disaster, speed of delivery was key. The delay in establishing a clear chain of command created a backlog of supplies like food, water, and medicine, leading to detrimental effects on suffering communities.

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[50] Douglas Sevier. (2017, January). Personal interview.
[51] "International Humanitarian Assistance and Disaster Relief Operations,"Joint Center for Operational Analysis/ Joint Forces Command, January 2007.
[52] Ibid.

The two most salient problems with Operation Unified Assistance were 1) deficient coordination and 2) friction between military and civilian organizations. These problems were likewise exacerbated by a reactionary posture. Although the organizations reportedly understood the basics of one another's roles and purposes, the military failed to institute practices to best facilitate coordination between the two actors.[53] Most civil-military coordination efforts were conducted out of the Combined Coordination Cell in Utapao, Thailand, in coordination with the Combined Support Force Headquarters.[54]

Civil-military shortcomings manifested themselves in a number of ways. Most basically, many civilian actors were not physically present at the Combined Coordination Cell, preventing them from adding input during the planning process. Relatedly, the communication that did occur among the various NGOs, IGOs, and nations was unstructured, as few SOPs had been set in place prior to the operation.[55] Further, the operation suffered from a scarcity of liaisons to facilitate coordination and communication. There was no joint control board or civil-military airlift/logistics liaison to facilitate communication between the NGOs who needed supplies or personnel moved and the military who had the equipment and manpower to move them. At the beginning of this operation, there were no daily 'sync' meetings between NGO and military actors in some areas of the operation. The absence of these three factors -- liaison roles, communication SOPs, and daily syncing procedures -- had a palpable effect on operations. Many NGO requests for movement did not reach the military, and others were received so late that the

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[53] B. Lynn Pascoe. (2017, April). Telephone interview.
[54] Charles Daly, "Humanitarian Assistance and Disaster Relief Communications for the 21st Century," *Naval War College*, 10 May 2007.
[55] "International Humanitarian Assistance and Disaster Relief Operations," p 27.

NGOs were forced to "find alternate means" of transportation and assistance. These miscommunications prevented the military from fulfilling the very role it was deployed to fill.[56]

This reactionary posture is also evident in several of the military's decisions after the commencement of the operation. For example, the military began including civilian agencies in nightly staff meetings and changed the name of JTF 536 to Combined Support Force 536. This language reflected the inclusion of civilian 'support forces' rather than only military 'tasked forces' in the operation. While these changes demonstrate excellent adaptation, they also represent initial deficiencies. Rather than anticipating such a disaster and developing contingency plans, the military only began planning for the operation after the disaster had occurred. Simple fixes could have included standardizing metrics used to measure progress, estimating the amount of supplies for different populations, and establishing SOPs for interorganizational communication for HA/DR operations. Rather than developing a plan for civil-military coordination before the disaster, key mechanisms -- e.g. the nightly interorganizational meetings -- were executed ad-hoc.

This reactionary posture toward HA/DR operations is likewise evident when we look beyond the friction points and examine the operation through wider lenses. Discussing how the concept of logistics for the operation came into being, Combined Support Force Commander LTG Robert Blackman recalled, "we studied very quickly in the limited time we had for planning." Specifically, his team located and examined the lessons learned from Operation Sea Angel, a disaster response in 1991.[57] While LTG Blackman's account demonstrates impressive

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[56] Ibid.
[57] The Center for Excellence in Disaster Management,"Lessons from Typhoon Haiyan" *The Liaison, A Journal of Civil-Military Disaster Management & Humanitarian Relief Collaborations*, Volume VII, (Spring 2015), 14

initiative, it also highlights a reactive posture. Instead of intensely 'studying' to prepare for another such disaster, much of the planning and concept design for the operation took place *after* disaster struck.

To be fair, there is evidence to suggest that this reactionary HA/DR posturing was emblematic of the government's response as a whole, and not just the military's response. Ambassador Lauren Moriarty, Ambassador to the Asia-Pacific Economic Cooperation at the time of the tsunami, remarked that the government, "does not do a good job in pre-crisis planning." She outlined a number of simple ways in which the military could better prepare for these disasters in general, such as establishing relationships with private sector companies like FedEx, prepositioning equipment, and designating media contacts, among other things.[58]

To some extent, crisis operations, by necessity, must always be planned simultaneously with their executions. LTG Blackman described this process as "planning your family vacation while you are packing the car."[59] Nonetheless, anticipatory measures can still be put in place to mitigate some of these major problems. We will see in later chapters that both formal institutional learning mechanisms and an informal learning ethos allowed the military to learn from these shortcomings. Eventually, we see evidence that the military shifted its posture on disaster relief from reacting to anticipating and preparing.

One final problem worth mentioning was not a direct shortcoming of OUA but speaks to a larger problem within the military's operational framework. At the time of OUA, the military did not prioritize building trust and cohesion among military and civilian actors. Around the time

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[58] Lauren Moriarty, (2017, January), Telephone Interview
[59] Elleman, *Waves of Hope*, p 34.

of this tsunami, collaboration among NGOs, the UN, USAID, and the American military in various global operations (like the war in Iraq) had increased, but remained relatively low. Below the highest command levels, few officers had worked intimately with civilian organizations and few knew much about them. The Air Force officer Colonel (R) Sevier who commanded the C-130s and helicopters operating out of Indonesia recalls the following humorous story:

> "...When the NGOs first showed up I was working in my uniform, and I needed to make a copy, so I walked over the copy machine. This young lady standing by the copy machine saw me walk up and got this look of terror on her face, stepping back from the copier in fear. Ha, I don't know what she thought I was going to do! She was absolutely terrified of the military."

Distrust of the military was common for NGO workers at the time. As one Mission to the World worker recalls, "there was a general skepticism about the military from the NGO community...there's a general feeling that as soon as you have the military involved, you wonder, 'Hm. Why exactly are they here?'"[60] On the other side of the coin, Colonel Sevier recalled his own unfamiliarity with the NGOs. In his fifteen years of service in the Air Force, he had never before worked with an NGO. Thus, although civil-military cooperation was discussed in doctrine at this point, it was by no means habitual or well-implemented.

Learning from Operation Unified Assistance

How did the military translate lessons observed during OUA into lessons learned, if at all? In this section, I show how the military successfully implemented 'simple-fixes' in the form of doctrinal and institutional changes. It will be helpful at this point to recall our baseline for learning. Given the lack of incentive -- perhaps even disincentive -- to learn effectively during

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[60] Christina Davies. (2017, February). Telephone interview.

HA/DR operations, overall we should expect the military to collect observations but fail to implement doctrinal, institutional, and practical changes.

Products of Learning

The majority of lessons learned from OUA directly addressed problems encountered in OUA. They were not anticipatory reforms.

In order to address frustrations with distribution, the military updated distribution plans in JP 3-07.6 'Joint Tactics, Techniques, and Procedures for Foreign Humanitarian Assistance' doctrine, detailing best practices for distribution coordination. It separates three different kinds of distribution in order to clearly define its own role with respect to that of other organizations. In defining these roles, the military sought to clarify command and control (C2) ambiguities experienced in OUA. Additionally, the military even created a new doctrine solely for 'distribution operations.' This new doctrine, JP 4-09, specifically addressed military distribution in disaster relief operations.

Relatedly, the military tackled problems of C2. It published an updated version of its HA/DR doctrine JP 3-29. The military added changes to JP 3-29 to clarify C2 roles and provide guidance for better civil-military coordination in a disaster response.[61] For example, it clearly indicates that USAID is the lead organization in these disaster responses. It also includes extensive descriptions of each agency and how the military can best interact with that agency in case of an emergency. Additionally, the military published updates to JP 3-08 defining how the

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[61] "Department of Defense: Joint Publication 3-29 on Foreign Humanitarian Assistance" *The Council on Foreign Relations*, 17 March 2009.

military's organizational purpose in HA/DR can best sync with that of other agencies and organizations.

Next, the military sought to amend problems of civil-military coordination. They did this in a number of ways. First, JP 3-29 outlined ideas for more effective communication between military and civilian actors. The new doctrine suggested a collaborative, non-secure information network; the employment of liaison officers to facilitate information sharing; and the need to include civilian organizations in the operational assessments and planning processes (JP 3-29, I-2).[62] Institutionally, the military assigned representatives from the Department of State's U.S. Agency for International Development (USAID) and its Office of Foreign Disaster Assistance (OFDA) to most geographic combatant commands, including PACOM, to ensure that the U.S. military's humanitarian-assistance efforts are well-planned and synchronized during disaster-response operations. Likewise, USAID added an Office of Military Affairs (now called the Office of Civilian-Military Cooperation). [63]

The military also sought to mitigate civilian-military friction points through increased contact among agencies in practical exercises. The first of many Asia Pacific Conferences on Military Assistance to Disaster Relief Operations was held, spearheaded by UNOCHA and the Center for Excellence. According to UNOCHA, this conference emerged "in the wake of the Indian Ocean Tsunami" to close the civ-mil gap that emerged during these operations.[64] The military has sent representatives to this conference each year since its conception. Additionally

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[62] Joint Staff "Joint Publication 3-29," Chapter I-II, I-2.
[63] Michael Reilly. (2017, January). Personal interview; Suzanne Basalla et al., "Managing Foreign Assistance in a CBRN Emergency The U.S. Government Response to Japan's 'Triple Disaster'" National Defense University Press Issue 68 (1st Quarter 2013). 27.
[64] UNOCHA, "The Asia Pacific Conferences on Military Assistance to Disaster Relief Operations (APC MADRO)

after OUA, tabletop disaster relief exercises were added, like the ARF Disaster Relief Desk-top

Exercise in Darwin, Australia, conducted from September 4-7, 2007.[65]

Analysis of Learning

This section seeks to evaluate the explanatory power of each learning theory based on the

character and amount the learning observed from OUA. From the information above, it is clear

that the military both engaged in learning processes and produced some -- albeit limited --

learning products. What explains this learning? Why did it happen at all, and why did it happen

in the way that it did?

We can draw from our realist, bureaucratic, and culturalist theories to produce potential

hypotheses for military learning in OUA. These theories must address two different questions.

First, according to each theory, were the conditions that catalyze learning present during OUA?

And second, do the content, rate, and nature of the learning match the predictions of that theory?

First, we will examine the realist theory. According to this theory, the conditions for

learning were only partially present during OUA. Realists might argue that the military's

learning in this situation can be explained by rising security threats or the U.S. military's

interests in the Asia Pacific region around the time of the disaster. Additionally, realists would

conclude that learning in disaster relief operations serves American security interests because it

allows the military to demonstrate its power in a region and partially stabilize a destabilized

region. In Southeast Asia and the Asia Pacific, demonstration of U.S. power via disaster relief

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[65] Ibid.

operations may dull the threat of Chinese regional expansion. Thus, if the American government

is concerned about a rising China and top military leaders stand attentive to regional security

threats, learning should occur in HA/DR operations there. In this scenario, policymakers and

practitioners will view HA/DR as a vehicle for achieving security objectives, rather than an

operation conducted for moral purposes. In order to evaluate the explanatory power of this

hypothesis, we must first determine the extent to which these conditions apply in the case of

OUA.

While the American government was concerned with the rising power of China around

the time of the tsunami disaster, it was also largely distracted by the War on Terror in the Middle

East. The 2006 National Security Strategy (NSS), which was written during the disaster, notes

the importance of integrating China into the global economy. Overall, the 2006 NSS mentions

"China" 28 times and "Asia" 31 times. In comparison, the document references "terror" or

"terrorism" almost 150 times.[66] This prioritization of the War on Terror was felt both within

military strategy and at an operational level. Although Admiral Thomas Fargo, former

Commander of PACOM, emphasized that his organization was "dealing with an emerging

China" at the time of the tsunami, he added that a top security priority for the Navy in 2004 was

the War on Terror.[67]

While the military may peripherally attain strategic benefits from conducting HA/DR

operations, few interviewees cited hard strategic interests as the reason the military conducts

these missions. In terms of palpable strategic benefits, the most the U.S. would gain would be

boosts to its international reputation and reinforcement of the global order. To be clear, this does

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[66] For reference, Obama's 2015 NSS mentioned "China" and "Asia" a total of 35 times, but also mentions "terror" and "terrorism" only a combined total of 54 times, a 150% decrease from Bush's 2006 NSS
[67] Thomas Fargo. (2017, March). Telephone Interview.

not mean that there are not strategic benefits to HA/DR operations, nor that the U.S. ought not

conduct them, but rather emphasize that the benefits are not felt at the military, operational level

and thus insufficiently explain military learning in this case. Lieutenant Colonel Matelski,

PACOM Ground Operations Planner and Civil Affairs Officer, goes as far as to classify HA/DR

as a secondary mission, separating it from primary defense goals. He said that HA/DR is in

America's interest, insofar as it...

> "...doesn't interfere with [the military's] primary mission of defending the homeland and defending our nation. It's all about building relationships, ensuring that the U.S. government is perceived in a positive light, and providing support to nations that don't have the capability to do it." [68]

Given these conditions surrounding OUA, the explanatory power of realist theories of

military learning are suspect. Next, we evaluate bureaucratic theories.

Drawing from bureautic theories of organizational learning, some may argue that the

military's post 9/11 budgetary feast led to learning from OUA. An increase in overall budget

allowed the military to invest more in non-combat operations, training, and personnel, which in

turn led to an increase in the amount of resources available for HA/DR. Learning during OUA

may have been higher than normal if there was indeed an increased budget for HA/DR and

HA/DR-related institutions (e.g. the Center for Excellence). If this was the case, we should

observe the deployment of more personnel and training to OUA than to traditional HA/DR. In

order to evaluate the explanatory power of this hypothesis, we must first determine the extent to

which these conditions apply in the case of Operation Unified Assistance.

The military experienced dramatic budgetary expansion post 9/11 and around the time of

the disaster.[69] However, it would be inaccurate to argue these budgetary increases benefitted

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[68] Thomas Matelski. (2017, January). Personal Interview.
[69] Dinah Walker, "Trends in U.S. Military Spending," The Council on Foreign Relations, 15 July 2014.

HA/DR operations because most of this surplus was immediately poured into the wars in Iraq and Afghanistan. In fact, there is far more evidence to suggest that HA/DR suffered as a priority amidst these broader budgetary cuts.[70] Indeed, many resources that had previously been allocated for HA/DR were repurposed for the War on Terror or 'borrowed' for operations in Iraq and Afghanistan.

Admiral Fargo described this dynamic and how it affected the military's posturing at PACOM. He said, "We were about 18 months into Iraq at the time; efforts were supporting War on Terror." American forces in the Asia Pacific, he continued, were a "principle force provider for the wars in Afghanistan in Iraq, training forces that could deploy to the CENTCOM AOR [areas of operations]..."[71] Fargo also discussed how PACOM had set up a JTF in the Philippines to advise and assist the execution of Enduring Freedom, further contributing to the shift in resources from HA/DR operations to the War on Terror.[72] Even the Center for Excellence in Disaster Management, which was conceived for the purpose of improving humanitarian and disaster relief operations, was re-purposed to support the War on Terror. Rather than researching and preparing for disaster responses, CFE's mission was refocused to address terrorism. CFE responded by developing terrorism-response training programs and working on peacekeeping operation training.[73] In short, HA/DR did not benefit from the budgetary feast caused by the War on Terror. Rather, HA/DR lost necessary resources and fell even lower on the military's list of operational priorities.

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[70] It is worth recalling that bureaucratic theory claims that budgetary famine, not simply cuts, will prompt learning--the budgetary cuts must reach force the organization into a state of existential crisis in order for learning to be triggered.

[71] Thomas Fargo. (2017, March). Telephone Interview.

[72] Thomas Fargo. (2017, March). Telephone Interview.

[73] Stephanie Pezard et al., "The Center for Excellence in Disaster Management and Humanitarian Assistance (CFE-DMHA): An Assessment of Roles and Missions,"RAND Corporation, 2016.

The predictions of bureaucratic theory roughly match the character of the learning observed in OUA. Learning was incited by a remarkably disastrous event, the content of the lessons included quick fixes, and the learning process was largely a reflective one. However, bureaucratic theory fails to address why learning processes might take place beyond these immediate and simple fixes, and why informal learning processes were at work.

Drawing upon culturalist theories of organizational learning, some may argue that the military's command leadership were the source of the learning that emerged from OUA. One highly motivated individual, or perhaps even a team of highly motivated individuals, fought against a bureaucratic culture resistant to change and pushed lessons learned into changes in institutions and doctrine nonetheless.

These theories, however, fail to explain both the character of the learning product and the nature of the learning process that we saw post-OUA. Recall that the learning observed after OUA was not a sharp spike, as the maverick explanation predicts, but rather the deliberate and simple incorporation of lessons learned into practices. Further, we did not see 'a few good men' working to upend the system, but rather an *ecosystem* of practiced learning. Though it was not required, each line of effort conducted an AAR to be passed along to planning and research teams.

In sum, while the explanations above provide important context for how the military may learn under other conditions, these theories fail to provide a compelling explanation for the amount and type of learning that occurred from OUA. As discussed above, the military felt relatively low pressure in the Asia Pacific region at the time of OUA; there were more

bureaucratic disincentives than incentives to improve and pursue a permanent leading role in these operations; and there were no signs of maverick officers pursuing change. Thus, there must be another force at work. There must be another force compelling the military to: 1) initiate the formal learning process, 2) complete that formal learning process by creating products of doctrinal and institutional change, and 3) begin the informal learning process. The conditions and learning outcomes for OUA are summarized below.

Conditions and Learning from Operation Unified Assistance

Security threat?	Budgetary Feast/Famine?	Maverick Officer(s)?	Formal Learning process?	Formal learning products?	Informal learning process?	Informal learning products?
Partial	No	No	Yes	Yes	Incomplete	To be seen

Based on the information highlighted above, we know that a mechanism other than the ones described by realist, bureaucratic, and culturalist theories triggered the learning post-OUA. The variables either were not potent enough or were not even present, and therefore could not have produced the amount of learning that we observed. What *was* present, though, were institutionalized learning mechanisms, as well as formal and informal processes.

At the time of OUA, a number of institutionalized learning mechanisms were available and had been used for years by the military. These include, but are not limited to: an indoctrinated AAR process, online experience/lesson-collection portals, and research centers. In general, utilization of these learning resources is not required, but is strongly encouraged by institutional mechanisms as detailed in doctrine on the operations process. Nonetheless, after OUA, each line of effort and command team conducted an after action review process and inputted collected lessons to their services' respective online experience-collection platforms (e.g. the Center for Army Lessons Learned and the Joint Lessons Learned Information System).

Teams consolidated these comments into reports and passed these reports along to research organizations and the J7 Joint Service Development, which assesses the effectiveness of present and future operations.[74] These teams also inserted their lessons into the Joint Lessons Learned Information System in order to make lessons available for any team or individual who wished to view them.

In addition to formal learning, informal processes were also at work in the wake of OUA. Unstructured and often undocumented, informal processes are difficult to identify. Nonetheless, personal accounts can provide an indication of whether or not the process was at work. One indicator of informal learning processes is the way events are discussed in retrospect. One indicator of such learning is discussion amongst professional and social networks about the successes and failures of the event. Admiral Fargo noted that after OUA, he, as the PACOM Commander, was "constantly talking to different groups, both foreign and domestic" about OUA. More interesting, he noted that debriefing OUA was the "principal subject of discussion for the first quarter of 2005," edging out North Korea, China, and any emerging situations in the Asia Pacific. Experiences were also shared through military journals and newspapers, discussions at war colleges, and discussions among combatant commanders and POTUS.[75]

Last, there were indicators of a learning ethos around the time of this Operation. Like informal learning, a learning ethos is difficult to identify. However, one indicator of such an ethos is the way individuals view and discuss their experiences. Colonel Sevier, Admiral Fargo, and Lieutenant General Glueck all described OUA as a "learning experience" that prepared them for future operations. Likewise, in recognition that their operational experiences had value, the

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[74]Joint Chief of Staffs, 2017 <http://www.jcs.mil/Directorates/J7%7CJointForceDevelopment.aspx>
[75] Thomas Fargo. (2017, April). Email followup to telephone interview.

team at PACOM requested and received a military historian. This person collected experiences and observations throughout the operation. Furthermore, the fact that non-mandatory informal and formal learning processes were conducted to completion suggests the presence of a learning ethos.

Given the presence and potency of these variables in the wake of OUA, does the amount and type of learning fall within institutionalization theory? The answer, I argue, is yes. Earlier, we discussed that the learning generated from OUA was reflective, primarily consisting of simple fixes, and that it surpassed baseline expectations for learning. The next chapter details how informal learning processes and a learning ethos worked synergistically to induce changes in practice for a subsequent mission, Operation Tomodachi. Given the presence and interaction of all these variables -- the institutionalized learning mechanisms themselves, the formal processes, and the learning ethos -- it is reasonable to conclude that institutional mechanisms drove the military to surpass our baseline for learning in HA/DR.

Indeed, despite the informal learning processes at work, there is a dearth of observable, measurable products from this informal learning after this disaster and before Operation Tomodachi, the next major Asia Pacific HA/DR Operation. This is because the results of these informal learning processes are either largely unobservable, or observable primarily in future practice and as the enhanced inputs of future learning mechanisms. So, while we see the undercurrents of informal learning beginning to take shape, we do not yet see the results of it in the time period between OUA and Tomodachi. The next chapter advances this case for

institutionalization theory by examining how the informal learning processes begun after OUA

effectuated changes in practice for Tomodachi.

Chapter IV
Actions Speak Louder than Words: Changes in Practice in Operation Tomodachi

"What a disaster relief operation really comes down to is not so much how good your doctrine is, not how well you train, but how you *actually* respond"
-Colonel (ret.) Craig Kozeniesky, Commander of Task Force Fuji, Operation Tomodachi

Introduction

The last chapter measured learning during Operation Unified Assistance. It demonstrated that learning, as measured by doctrinal and institutional changes, surpassed our baseline expectations. After evaluating theories for military learning, I postulated that institutionalization theory offers the most complete explanation for this learning. In part, this chapter seeks to continue the analysis begun in OUA by examining how these changes were implemented in Operation Tomodachi. In doing so, it furthers develops institutionalization theory as an explanation for military learning.

The Disaster and Operation Tomodachi

Six years after and 3,000 miles away from the Indian Ocean Tsunami, disaster struck in Japan. On March 11, 2011, a magnitude 9.0 earthquake shattered the coast of an island east of mainland Japan. Next, the earthquake triggered a massive tsunami, creating seven monstrous waves over the next few hours. Fukushima nuclear power plant (about 170 miles north of Tokyo) was damaged in the tsunami, and a couple of its nuclear reactors exploded, causing a radiological emergency. This Triple Disaster--earthquake, tsunami, nuclear explosion-- was devastating for Japan and the surrounding area.

More than any other nation in the world, Japan had taken extensive measures to prepare for earthquakes and tsunamis prior to the disaster in 2011. The nation invested in strong and resilient infrastructure, installed early warning systems, implemented and enforced strict building codes, installed seawalls, and established extensive communications plans to manage the chaos of a natural disaster.[76] Much of this investment paid off in 2011 when early warning systems and earthquake-resistant infrastructure saved countless Japanese lives. Ultimately, however, almost 20,000 people were killed by the tsunami.[77] The crisis worsened exponentially. By March 17th over 500,000 people were displaced, millions were left without access to clean water, and many were at risk for radiation exposure because of the Fukushima power plant meltdown.

Moments before the eruption of this chaos, the Japanese and American foreign ministries happened to be convened in the heart of Tokyo, discussing a recent Wikileaks release of confidential Japanese-US conversations.[78][79] Within hours of the earthquake, the Japanese had given the U.S. permission to initiate a whole of government disaster response. The military's role in this response was titled Operation Tomodachi (meaning "friend" in Japanese).

Like OUA, Tomodachi also fell under PACOM's command. PACOM assigned U.S. Forces Japan to lead the operation due to USFJ's proximity to the most affected area (Tokyo). Assigned to USFJ for support were the 7th Fleet, Fifth Air Force, U.S. Army Forces Japan, and Marine Forces Japan. In total, the military mobilized over 18,000 service members, 19 ships, and

[76] Daniel Kaufmann and Veronika Penciakova, "Japan's Triple Disaster: Governance and the Earthquake, Tsunami and Nuclear Crises, " *Brookings Institution*, 16 March 2011.
[77] Elizabeth Ferris and Mireya Solís, "Earthquake, Tsunami, Meltdown – The Triple Disaster's Impact on Japan, Impact on the World," *Brookings Institution,* 11 March 2013.
[78] James Zumwalt, (2017, March), Telephone Interview.
[79] John Vidal, "WikiLeaks: Secret whaling deal plotted by US and Japan," *The Guardian,* 6 January 2011.

140 aircraft.[80] As written, the mission of Operation Tomodachi was to "coordinate with the Government of Japan to determine required support to save lives, reduce human suffering, and/or mitigate great property damage within Japan."[81]

The Joint Task Force in Tokyo was soon established. American soldiers, sailors, and civilian disaster relief experts descended upon Tokyo, assisting local NGOs and Japanese civil society with relief efforts. Highlights of relief efforts include the rehabilitation of Sendai International Airport, which increased other organizations' ability to mobilize and provide relief, massive search and rescue operations, logistics support and port clearance operations on Oshima Island, the cleanup and rebuilding of schools, and the cleanup of Nobiru Train Station.[82] The mission's execution officially began on March 12th (one day after the Triple Disaster) and ended on April 8th.

Operation Tomodachi is generally considered a great success. Its exceptionally quick response saved lives and prevented the situation from deteriorating further. The first relief supplies were delivered within hours of disseminating the operation order, and within about two weeks, PACAF had conducted 444 sorties, carrying close to 6 million pounds of cargo for the operation.[83] 3rd MEB reported that "transportation resources were rapidly tasked" and "Marine Corps and Air Force airlift assets were employed within 24 hours notice to meet requirements."[84]

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[80] Jennifer D. P. Moroney et al., "Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region," RAND Corporation, 2013; NPR Staff and Wires,"Japan Reports Progress In Stabilizing Nuclear Plant," National Public Radio News, 20 March 2011.
[81] USMC Support of Joint Support Force Japan (JTF 519), After Action Report
[82] Shuichi Wada, "Japan Chair Platform: Operation Tomodachi in Miyagi Prefecture: Success and Homework," *CSIS*, 21 December 2011
[83] Jennifer D. P. Moroney et al., "Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region," RAND Corporation, 2013.
[84] 3rd Marine Division After Action Report Tomodachi, 24

The speed with which the military reacted was due in large part to the fact that so many U.S. troops are already stationed in Japan as part of U.S. Forces Japan.

The proximity of U.S. Forces Japan had two key effects on the operation. First, logistically, it is faster to travel several hundred miles than several thousand, and it is simpler to deploy troops from the same command than it is to pull troops from a number of different areas all over the AOR. Second, the proximity of USFJ to the disaster meant that the American military had been training and working with the Japanese for some time. These pre-established relationships were invaluable amidst the chaos of the disaster response. A RAND report notes that years of "bilateral training, exercises, and planning" between Japanese and American forces had a sizeable positive impact on the execution of the response.[85]

The overall success of the operation is reflected in the local population's reception of it. According to a Yomiuri-Gallup opinion survey, although the majority were still weary of the strong U.S. troop presence in Okinawa after the disaster response, 94% of Japanese respondents appreciated Operation Tomodachi.[86] And one RAND study noted that the US favorability rating in Japan surged from 66 percent to 85 percent in the two weeks after the earthquake.[87] The operation also reflected well on the American military from the perspective of Japanese officials, generally. Top American officials reported that their relationships with Japanese counterparts were significantly improved because of the operation. In an AAR, BGen Craig Timberlake, commander of 3rd MEB noted "[Operation Tomodachi] has cemented our relationship...with the Japanese. It's helped to change the political scene here, the political environment."[88] These

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[85] Shuichi Wada, *CSIS*, 21 December 2011
[86] Ibid.
[87] Jennifer D. P. Moroney et al., "Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region," RAND Corporation, 2013.
[88] USMC Support of Joint Support Force Japan (JTF 519), After Action Report, 23

improved relationships and public perception of the American military underscore the effectiveness of the effort.

Lessons Learned: How Lessons from OUA were Implemented-- "Learned" for Tomodachi

In this section, I will highlight how the execution of Operation Tomodachi improved upon problems experienced in OUA. Then, I will analyze why these changes occurred. I contend that the most reasonable explanation for this practical learning lies in a combination of formal learning and informal learning processes.

Practicing Lessons Learned

Recall that in OUA, the key shortcomings centered around command and control (C2), distribution, and civil-military coordination and communication. C2 was largely unchanged in Tomodachi, for reasons I will explain later in this chapter. Distribution was conducted in a manner dramatically different than in OUA because of the capabilities and partnership with the Japanese Armed Forces. So, in this section I focus on discussing improvements in civil-military coordination. Recall that in OUA, there were a number of deficiencies in civil-military collaboration, including ambiguities in C2 relationships and roles; speed and efficacy of communication, exacerbated by a scarcity of liaison officers; and less-than-accurate assessments and planning processes because civilian actors were either not utilized or excluded from these processes. Furthermore, civil-military authorities lacked basic familiarity with one another. Each of these deficiencies was improved upon in Operation Tomodachi.

First, command teams were integrated from conception, demonstrating attention to interagency collaboration at all levels of command. At the highest levels, key leaders developed a bilateral assistance coordination cell that included all U.S. government agencies and met daily. One level down, Commanding General of 3rd MEF and the Commander of JTF-505, Lt.Gen Glueck, decided to locate the USFJ headquarters at Yokota. It was a useful location because of its proximity to both the military and civilian command teams. He said in an AAR, "within 5 minutes, we could be in the center of the JTF-519 headquarters, engaged with the leadership of Operation Tomodachi."[89] And even within the command reporting to Lt.Gen. Glueck's command, the operational planning process included actors from various disaster response groups. For example, Colonel Kozeniesky of the Combined Arms Training Center Camp Fuji organized an interagency command team, 'Task Force Fuji', comprised of over 160 military and over 100 U.S. and Japanese civilian personnel.[90] Additionally, daily planning meetings included actors from all organizations-- the Japanese military, interpreters, "folks in the embassy", civil authorities and NGOs (which were mostly coordinated through the Japanese armed forces).[91] From the top all the way down, collaboration and information sharing was implemented.

Second, where there were not completely integrated teams, the military incorporated representatives from other organizations into its planning efforts or send representatives to other organizations' planning. For example, the military positioned a number of its personnel at the embassy in Tokyo, in addition to those who were already working there on a daily basis (e.g. foreign area officers). These liaison officers (LNOs), according to Admiral Scott Van Buskirk,

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[89] Ibid.
[90] Ibid. 12
[91] Craig Kozeniesky, (2017, March), Telephone Interview.

Commander of the 7th fleet, were "critical" in the planning process and "part of the drum beat" of the operation.[92] State Department representatives were placed into a number of operational planning teams, as were USAID officials and Humanitarian Assistance Survey Teams. These teams worked primarily as a liaison team between the American military and Japanese military, who worked directly with the local populace.[93] Additionally, even where teams were not integrated nor where representatives not exchanged, key leaders made sure to hold frequent meetings to sync on planning issues.[94]

Third, on a more personal level, both military and civilian personnel were more familiar with one another in Tomodachi than they were in OUA. Recall from OUA Colonel Sevier's account of OUA; even he, being an officer as high up the chain of command as a C-130 commander, had little to no exposure to USAID, the State Department, and NGOs before the operation.[95] By Tomodachi, this had changed. Based on AARs and interviews with personnel, almost everyone involved had had *at least* a general familiarity with other disaster relief actors.

Analysis of Learning

Why did practices in civil-military coordination improve from Operation Unified Assistance to Operation Tomodachi? Of course, because the execution of any operation is subject to a number of moving pieces, there are a number of reasons that these practices might have improved from OUA to Tomodachi-- stronger leadership, a smaller national crisis versus a

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[92] Scott Van Buskirk, (2017 April), Telephone Interview
[93] USMC Support of Joint Support Force Japan (JTF 519), After Action Report, 24
[94] James Zumwalt, (2017, March), Telephone Interview
[95] Douglas Sevier, (2017 January), Personal Interview

transnational crisis, or a better relationship with the host nation, to name a few. Nonetheless, we can make some informed suppositions about the forces driving this practical change.

First and most simply, the doctrinal and institutional changes that were made after Operation Unified Assistance were put into practice carried over into the actual practice of the next major response-- Operation Tomodachi. The last section identified key areas where the military implemented the doctrinal and institutional changes it made after OUA into Tomodachi--the employment of more liaisons; a shared and unclassified communication platform; and the need to include civilian counterparts in the assessments and mission planning process, to name a few. By actually practicing doctrinal and institutional lessons learned from OUA, the military completed the learning process through to Operation Tomodachi. This is remarkable because based on our baseline expectations for learning, lessons learned from OUA should have resulted only in observed lessons, not full doctrinal and institutional lessons, let alone carried over into actual changes in practice.

Moreover, there is evidence to suggest that civil-military coordination benefited considerably from experiences gained in other operations -- 'spillover' learning. The majority of personnel with whom I spoke cited the wars in Iraq and Afghanistan as a key 'learning experience' that taught them best practices for civil-military coordination, not just in combat zones, but also in HA/DR situations. As Colonel Kozeniesky, commander of Task Force Fuji recalls,

> "In Iraq I worked with USAID quite a bit. In 2006, I was in Anbar Province, Ramadi as part of the Anbar Awakening and Bush surge. So, we went from pretty intense fighting to working on what was pretty much an emergency/humanitarian disaster response.

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Basically, a huge disaster exacerbated by war. We learned a lot from doing that, a lot about reconstructing a city, helping the local population."[96]

Indeed, at the time disaster struck in Japan, the U.S. had been fighting the war in Iraq for nearly eight years, and in Afghanistan for over nine years. Thus, the officers who had reached the operational planning level of command at the time of Tomodachi had cut their teeth on those wars; they had 'grown up' operating in an interorganizational environment.

Third, military personnel also cited previous HA/DR experiences as a key factor in teaching them best practices for civil-military coordination in HA/DR. By the time the triple disaster in Japan rolled around, the military simply had more experience conducting disaster relief operations. 3rd Marine Expeditionary Unit in particularly was considered the 'handyman' of disaster relief.[97] Col. Koziensky noted how his increased exposure to HA/DR operations informed how he responded to Tomodachi. He said that he knew from his, "experience in the Philippines that the longer you wait, the chances of survival diminish significantly."[98] He elaborated that his past experience responding to the 2006 Mudslide in the Philippines taught him that the first 48 hour period is critical in finding survivors, prompting him to act aggressively with DoD in DC to get his Task Force's plan, or concept of operations, approved so they could move out. Within days, his team was on the ground in large part due to Col. Koziensky's prior experience.

A number of personnel, like Col. Koziensky, emphasize past involvement as the key to knowing how to plan and execute a successful HA/DR operation. In AARs from Tomodachi, personnel noted their backgrounds and the experience of other military personnel with HA/DR as

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[96] Craig Kozeniesky, (2017, March), Telephone Interview.
[97] Ibid.
[98] Ibid.

influential. They say they looked to past AARs, employed professional and social networks to learn from others' experiences, and looked to their own previous exposure in order to prepare for Operation Tomodachi. As the USMC AAR to Operation Tomodachi notes, "aviation and logistics Marines all noted that previous operations have resulted in an experience base of those who are familiar with planning and execution of HA/DR."[99] The AAR goes on to quote a liaison officer on the JTF-519 team, Captain Nelson, who noted,

"Read the after action reports...out here [a disaster] happens every year during typhoon season, so there is always somebody here who has operated in an HA/DR environment before, who understands those unique considerations of dealing with other [actors]...," and likewise, "This [Operation Tomodachi] is probably going to make us a little better prepared for when [a disaster] happens again."[100]

In sum, many aspects of Operation Tomodachi execution went better than did that of OUA because doctrinal changes were followed through on; personnel gained experience working in Iraq and Afghanistan and then applied that experience to HA/DR; and personnel shared experiences among one another and gained experience in HA/DR for themselves. In the next section, we will connect this finding once again to our theories of military learning.

Further Analysis of Learning from OUA

In the last chapter, we evaluated the explanatory power of other theories of military learning in Operation Unified Assistance. Deducing that realist, bureaucratic, and culturalist explanations alike are unsatisfying in explaining learning from OUA, I postulated that institutionalization theory offers a more compelling explanation for learning. Here, I will

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[99] USMC AAR, Operation Tomodachi, 31
[100] Captain Christopher Nelson, Aviation Liaison Officer to JTF-519 and Operations Officer, Marine Air Support Squadron 2 in USMC AAR, Operation Tomodachi, 31

continue that analysis by discussing the ways in which these changes in practice advance the case for institutionalization theory.

For one thing, these practical changes indicate the completed learning cycle of a formal learning process. This is unexpected given our expectations for how the military should learn in disaster relief: learning should be doubly incomplete in that lessons should be observed, but not indoctrinated or institutionalized, and these lessons should not effectuate changes in practice. In fact, we see that the military far surpasses these expectations by creating doctrinal, institutional, and practical change.

On a similar note, we see that an informal learning process was at word and is linked to changes in practice. Captain Nelson's note that "there is always somebody here who has operated in an HA/DR environment before" implies that personnel seek out individuals with experience, seeking to develop an experience network from which lessons can be shared and learned. Indeed, what is telling about Captain Nelson's note is not so much that he had experienced HA/DR in the past, but that he viewed that experience as consequential in the execution of further operations. Further, Captain Nelson's statement that Operation Tomodachi is likely to "better prepare" his team for future HA/DR operations is indicative of a culture that seeks to gather and retain lessons as much as possible, no matter the type of operation. This sentiment is echoed in the recognition of Colonel Kozeniesky and others, who noted the significance of their experiences in Iraq and Afghanistan as 'learning experiences' for both working with civilian agencies and working on humanitarian operations. Such recognition and reverence for experience points to an underlying organizational culture that seeks to incorporate

experience into lessons learned and seeks to apply experience to a multitude of different contexts.

Ultimately, the execution of Tomodachi, as detailed in the events themselves, AARs, and personal accounts, continues our analysis from the last chapter and reinforces our inclination that institutionalization theory, rather than others, offers the most compelling explanation for learning in HA/DR.

Shortcomings and Learning from Operation Tomodachi

Despite the many lessons that were learned from OUA to the Triple Disaster, the military nonetheless experienced a number of shortcomings in Tomodachi. I argue that these shortcomings emerged primarily because the military entered the operation with the same reactionary HA/DR posturing that was seen in OUA.

In many ways, a disaster of this scale happening in Japan was unforeseeable. Ironically, because Japan expects natural disasters and has thus prepared for them more than any other nation, there was no expectation that Japan would need significant humanitarian assistance from the U.S. Further, the event of a triple disaster in Japan -- a 9.0 moment magnitude earthquake, follow by an unusually overwhelming tsunami, and a radiological disaster-- was remarkable and unexpected by almost all actors. That said, it is surprising that the U.S. had no plan for a natural disaster in a nation that is home to 50,000 troops and military families. From this lack of preparation emerged a number of problems that could have been been anticipated and prevented through proper planning, despite the unexpected destruction of the disaster. Three shortcomings in particular stand out.

In the first place, the military failed to prepare for a set assessment standards for a nuclear disaster. One major shortcoming was the failure to properly prepare for operating in a chemical, biological, radiological, and nuclear (CBRN) environment. The military had not set standards for emergency assessment, nor evacuation despite stationing over 50,000 personnel in Japan, and CBRN capabilities were not well known nor understood.[101] This lack of preparation led to the evacuation of all American personnel within 50 miles, which, according to Ambassador Zumwalt was a major mistake.[102] Not only was the Nuclear Regulatory Commission "irate" for reasons to do with protocol, but also the evacuation of so many American personnel at once alarmed the local populace, in turn heightening tensions between Japanese and American officials.[103]

Second, there were key problems around C2 throughout the operation, but for reasons different than what we saw in OUA. In OUA, most C2 problems centered around civil-military coordination and syncing lines of efforts. Yet in Tomodachi, most C2 problems had to do with the command team itself and the speed with which it was able to respond. PACOM designated USFJ HQ the central command authority, which led to a host of legal and operational complexities and confusion because of USFJ's organizational purpose; USFJ does not deploy, nor plan operations, but rather its responsibilities include maintaining port facilities and "providing base and logistic support across Japan."[104] As General Glueck put it, "USFJ is a

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[101] Operation Tomodachi, Pacific Command General PPT, JLLS.
[102] James Zumwalt. (2017, March). Telephone Interview.
[103] Jennifer D. P. Moroney et al., "Lessons from Department of Defense Disaster Relief Efforts in the Asia-Pacific Region," RAND Corporation, 2013; James Zumwalt (2017, March), Telephone Interview.
[104] Center for Excellence, "Civil-Military Lessons Learned in the Response to the 2011 Great East Japan Earthquake," *The Liaison* (Volume V 2012), 56-57.

political-military headquarters; they are not focused on [operations]...they are focused on

political stuff, [so] they had no idea how to do a response."[105] USFJ was not staffed nor

configured to support operational-level C2, and which slowed the initial.[106] It is worth noting

also that additional C2 problems centered around working with a host nation with as many

military capabilities as the Japanese Forces; American forces were not prepared to take a 'back

seat' to efforts coordinated by the host nation.[107]

Finally, a number of other deficiencies in Tomodachi planning and execution have to do

with one major deficiency: the military had not planned for a disaster relief operation in a nation

as wealthy, developed, and stable as Japan. Before Japan, the majority of HA/DR operations had

been conducted in nations with suboptimal infrastructure, underdeveloped private industry, and

weak militaries. The 3rd Marines Expeditionary Brigade AAR puts it best, "Don't assume every

nation will implode in a disaster."[108] This led the military to miss, or nearly miss, opportunities to

provide relief in ways it had not anticipated. For example, when the Japanese requested water,

the military's knee jerk reaction was to send millions of bottled waters; fortunately, planners on

the civilian side of things suggested reaching out to the large Coca-Cola factory in Japan to

provide water, saving American taxpayers hundreds of thousands of dollars in logistics.[109]

Each of these details point to a shortcoming in the learning that we saw from OUA before

Tomodachi. While the military incorporated simple fixes and improved its practice of HA/DR, it

did not undergo any broad structural changes or paradigm shifts in the way it conducts HA/DR.

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[105] Ken Glueck (2017, March), Telephone Interview.
[106] Ibid.
[107] Ibid.
[108] "After Action Report for Operation Tomodachi...," 3rd Marine Expeditionary Division, 6 May 2011.
[109] James Zumwalt, (2017 March), Telephone Interview.

At the time of Operation Tomodachi, the military still viewed HA/DR as largely reactionary

operations that could not be planned for. The next section describes how this changed after

Tomodachi, and how the military once again learned to implement simple fixes.

Chapter V:
Post Tomodachi Reposturing?

"You can't fully prepare for those things [major disasters], but you *can* get in front of them--get left of the boom-- through exercises and proper planning"
-Lieutenant General Ken Glueck, 3rd Marine Forces Commander, Operation Tomodachi

This chapter tests our theories for military learning by identifying and analyzing the learning that emerged from Operation Tomodachi. This chapter argues that military learning occurred despite the absence of traditional incentives to learn, and that institutionalization theory best explains this learning. In order to support this argument, this chapter describes and analyzes the learning that took place in the wake of Operation Tomodachi. I argue that the the military learned more than expected in Tomodachi and that the type of learning that emerged was substantively more proactive than we would expect. This chapter ends by once again evaluating the explanatory power of each theory of military learning, concluding that institutionalization theory best explains the military's pattern of learning post-Tomodachi.

Products of Learning

After Operation Tomodachi, we see a number of institutional and doctrinal changes that correspond directly to problems experienced in the disaster response. Additionally, however, we see additional trends in learning emerge. First, there appears to be more of it, with more DoD-sponsored publications and reports on HA/DR produced after Tomodachi than after OUA. Second, the military appears to have undergone a paradigm shift in the way that it views HA/DR operations, shifting its perspective of HA/DR from largely reactionary to anticipatory. In this

section, I will first unpack each of these changes, analyze the mechanisms behind the change, and return to our theories in order to evaluate why this learning took place after Operation Tomodachi.

Like after OUA, the learning products that emerged after Operation Tomodachi directly corresponded to problems encountered during the mission. I have labeled these learning products 'simple fixes'. Indeed, the military updated doctrine in order to address problems related to nuclear crisis, producing Joint Publication 3-11 Operations in Chemical, Biological, Radiological, and Nuclear Environments.[110] Recall that in Tomodachi, the military had not set standards for assessment or evaluation of a nuclear emergency. Additionally, there was a basic unfamiliarity with procedure. This new version of JP 3-11 "defines four new levels of CBRN hazard identification" and outlines procedures, as well as providing recommendations, for new ways of training CBRN.[111] The military also noted ways to prepare for such risks in doctrine published in the wake of the Triple Disaster, such as the DoD's guidebook for JTF commanders in disaster relief operations.[112]

Another example of a 'simple fix' is the establishment a new SOP designating that forward deployed forces should take the lead in HA/DR operations from the beginning. Director of CFE Joseph Martin noted that around this time, it became a known SOP that 3rd MEB would lead these operations, saying, "they're ready to go. They're going to go."[113] The military then updated its doctrine on SOPs for operating in a multinational structure, completed a final version

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[110] Originally published in 2008, the military updated this doctrine in 2012 in the immediate aftermath of the Triple Disaster.
[111] "JP 3-11: Operations in Chemical, Biological, Radiological, and Nuclear Environments," Joint Staff, 2008.
[112] "Department of Defense Support to Foreign Disaster Relief: Handbook for JTF Commanders", 13 July 2011.
[113] Joseph Martin, (2017 January), Personal Interview.

of its updates in October 2013, as well as its SOPS regarding the choosing the commanding force.[114]

This time, however, the military did not merely undergo 'simple fixes' in the wake of a crisis event. After Tomodachi, we see a different, more structural kind of learning taking shape in a number of ways. The military re-organized CFE from a globally-oriented organization to one focused solely on the PACOM area of responsibility.[115] CFE developed a closer relationship to PACOM and the organization became more symbiotic.[116]

This focus on the PACOM-area of responsibility is reflected in CFE's publications and increased research. In the wake of Tomodachi, the Center for Excellence began producing Disaster Management Reference Handbooks, guides that are intended "to provide decision makers, planners, responders and disaster management practitioners with an overview of the disaster management structure, policies, laws, and plans" for a particular host nation. These guides provide the military with information on population numbers, hot spots for weak infrastructure, and the local government's national disaster relief structure. Overall, the guides aim to expedite the response process in areas that have, in the past, hindered the speed and efficacy of HA/DR response.

Additionally, the Center for Excellence began producing its *Liaison* journal, which details lessons learned and best practices for disaster relief after almost every major or medium disaster response.[117] Joseph Martin, the current Director of CFE, called these publications both "anticipatory and reactionary" because after a disaster, they immediately incorporate lessons

[114] Multinational Planning Augmentation Team (MPAT) Secretariat, "MNFSOP," PACOM HQ, December 2014.
[115] Stephanie Pazard et al., "The Center for Excellence in Disaster Management: an assessment of roles and missions," RAND Corporation, 2016.
[116] Joseph Martin, (2017 January), Personal Interview.
[117] Center for Excellence, Liaison Archives, <https://www.cfe-dmha.org/Publications/Liaison/Liaison-Archives>

learned into new publications. However, the publications are also 'anticipatory' in that they seek

to predict and assess the risks of upcoming disasters. Martin and many others at the CFE noted

that, based on research, they anticipated an upcoming crisis in Bangladesh and had advised

PACOM to be on standby for it.[118]

The military also began taking preventive measures like working to increase host nation

capabilities and developing early detection disaster response mechanisms.[119] A number of

officials cited these capacity building efforts as evidence that the military was developing

tentative plans for future disaster relief operations. Lieutenant General Ken Glueck, who

participated in OUA, Tomodachi, and numerous other responses while commanding the Joint

Task Force in Operation Tomodachi, noted this prepositioning in the runup to Nepal.[120]

Glueck said that after Tomodachi, his team embarked on a training exercise in Nepal.

This exercise united military and civilian planners, including USAID,Nepal's military, the

Embassy, and independent experts.[121] They convened for ten days, walking the streets

Kathmandu and wargaming crisis scenarios in Nepal. This ten day conference culminated in the

production of a tentative concept of operations for a disaster in Nepal, which Glueck estimates

could shave 4-5 days off the response time for an operation in Nepal.[122] Glueck said that, sure

enough, when disaster struck Nepal in 2015, General Wissler had a concept of operations to

assist him in planning. In this way, the military got, as Glueck said, "as far left of the boom" as

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[118] CFE personnel (2017, January). Personal interviews. It is worth noting that CFE is not the only organization to publish more reports on disaster relief in the wake of Tomodachi. The DoD also funded comprehensive external assessments from RAND, in addition to conducting a number of internal assessments.
[119] PACOM officials, (2017, January), Personal Interviews.
[120] Ken Glueck, (2017, March), Telephone Interview.
[121] Ibid.
[122] Ibid.

they possibly could given the moving pieces of a crisis scenario.[123] A number of officials at

PACOM and CFE alike echoed Glueck's thoughts when discussing the Philippines. They

highlighted the military's rather light response to the 2014 flooding as evidence that the

military's train and assist and capacity building partnership with the military in the Philippines

worked. The American military did not need to respond with full might because it had already

helped to develop the Philippine's ability to respond independently.[124]

Analysis of Learning

This section seeks to evaluate the explanatory power of each learning theory based on the

character and amount the learning observed from Operation Tomodachi. From the information

above, it is clear that the military continued to implement small fixes while also undergoing what

appears to be a paradigm shift in the way it views disaster relief operations. What explains this

learning? Why did it happen at all, and why did it happen in the way that it did?

Again, our realist, bureaucratic, and culturalist theories inform potential hypotheses for

military learning in Tomodachi. These theories must address two different questions. First,

according to each theory, were the conditions that catalyze learning present during Tomodachi?

And second, do the content, rate, and nature of the learning match the predictions of that theory?

First, we will examine bureaucratic theory. According to this theory, the conditions for

learning were not present during and after Tomodachi. Bureaucrats might argue that Obama's

'pivot to Asia' resulted in an increase in funding to PACOM and disaster relief operations alike.

However, we do not see a dramatic increase in PACOM's budget for disaster relief. In fact, CFE,

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[123] Ibid.
[124] PACOM and CFE officials, (2017, January), Personal Interviews.

the military's primary source for disaster relief training and research, had its funding cut significantly. The current director of CFE, Joseph Martin concluded that CFE had "70 enduring and 21 implied tasks, and a total of 158 specific required activities", but of those 158 activities, "only 44, or 28 percent, were fully resourced, while 74 activities were partially resourced and 40 lacked any support."[125] Moreover, General Glueck reported skepticism that the pivot to Asia brought a significant increase resourcing to the military's area of responsibility at all, let alone for the secondary task of disaster relief.[126]

Furthermore, the character and rate of learning we observed after Tomodachi does not fit within the predictions of bureaucratic theorists. Recall that bureaucratic theories predict learning to increase in the wake of a remarkable event -- a disaster -- and that the content will largely consist of quick fixes. While we see a spike in learning after the crisis event Tomodachi, and we do, in fact, see a number of 'quick fixes', we also see the undercurrents of another type of learning. This other type of learning is broader, deeper, and more structurally focused than mere quick fixes. Thus, bureaucratic theories provide an unsatisfactory explanation for learning from Tomodachi.

In addition, we will examine the culturalist theories. Culturalist theories are unsatisfactory in their explanations of learning from Tomodachi for largely the same reasons they were for OUA. Some might argue that the leadership of General Glueck or that the Marines' command and attention to disaster relief motivated learning, arguing that the Marines took on a 'maverick' role themselves in reforming disaster relief doctrine and posture.

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[125] Pazard
[126] Ken Glueck, (2017, March), Telephone Interview.

These theories, however, fail to explain both the character of the learning product and the nature of the learning process that we saw after Tomodachi. We did not only see a sharp spike in learning after Tomodachi but also the deliberate and simple incorporation of lessons learned into practices. Further, reform efforts were made by a number of different organizations within the military; from the Army's Pacific Pathways emphasizing capabilities to 3rd MEF's forward planning to PACOM and CFE's increased attention to future operations, we did not see 'a few good men' working to upend the system, as much as an ecosystem of practiced learning.

Third, we will examine realist theories. These theories provide a more compelling explanation for learning than do bureaucratic and culturalist theories, but nonetheless are incomplete. Realists might argue that Obama's 'pivot to Asia' increased the attention on the PACOM area of responsibility, triggering an increase in learning. Obama was more attentative than past presidents, not only to the threat of a rising China and North Korea, but also climate change itself. Thus, realists might say that the U.S. has a strategic interest in maintaining stability in the region.

While this 'pivot to Asia' explanation is reasonable, it is also incomplete. General Glueck noted that "the President's shift to the Pacific was a lot of rhetoric" -- in that while the area may have seen an increase in overall resourcing, the "mindset" was still focused on the Middle East in the wake of Tomodachi. Iraq and Afghanistan was still the primary security interest for the U.S. at the time of the disaster; these wars, even after the pivot, were still extracting much of the manpower and capabilities from the PACOM components.[127] Further, if the U.S. was

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[127] Ken Glueck, (2017, March), Telephone Interview.

strategically concerned with disaster relief, why cut funding to disaster relief training and research, as it did in the wake of Tomodachi? Given these snags, it is reasonable to conclude that realist explanations do not provide entirely satisfying explanations for learning.

Given the shortcomings of realist, culturalist, and bureaucratic theories, and what we know about learning post-Tomodachi, it is reasonable to deduce that other mechanisms at work. Just as after OUA, the variables that other theories claim induce learning either were not potent enough or were not even present, and therefore could not have produced the amount of learning that we observed. However what *was* present, like after OUA, were institutionalized learning mechanisms, as well as formal and informal processes.

By in large, the same institutionalized learning mechanisms that were present post-OUA were also present post-Tomodachi -- the indoctrinated AAR process, and online lessons learned databases, to name a couple. And again, just after OUA, the military underwent formal. Almost every service and line of effort conducted an AAR and produced a report, which they passed along to research organizations like RAND and to internal staff, e.g. J7 Joint Service Development, in order to be consolidated into institutional memory for future planning and operations.[128] These teams also inserted their lessons into the Joint Lessons Learned Information System in order to make lessons available for any team or individual who wished to view them.

Additionally, there are signs that a number of informal learning processes took place in the wake of Tomodachi, informing a change of posturing. First, after Operation Tomodachi, individuals like General Glueck who had experience with disaster relief became commonplace in

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[128]Joint Chief of Staffs, 2017 <http://www.jcs.mil/Directorates/J7%7CJointForceDevelopment.aspx>

leadership roles. The director of CFE, the commander of the J3 operations team at PACOM, and the commander of 3rd MEF alike had disaster relief experience before embarking on their roles. A number of personnel pointed to these leaders as critical resources in the planning and execution for disaster relief, not so much as an individual expert, but rather as a resource for experiential and institutional knowledge to be shared. In developing the current PACOM concept of operations, one member of the J3 staff Lieutenant Commander Schaeffer said that, "Most of the research for the revision of the concept of operations came from reviewing lessons learned from the PACOM staff and components."[129]

In describing his process for writing this current concept of operations he said, "those that had the experience was vital and having all the products that were created during those events also helped to determine, in hindsight, where we could have made improvements,". Schaeffer's reference to informal conversations is suggests that individuals are employing networks of experience in order to improve their own understand and execution of disaster relief. Such attention to experience and learning is indicative of a learning ethos and informal learning mechanisms driving improvement.

The table below summarizes the conditions and products of learning from Tomodachi.

Conditions and Learning from Operation Tomodachi

Security threat?	Budgetary Feast/Famine?	Maverick Officer(s)?	Formal Learning process?	Formal learning products?	Informal learning process?	Informal learning products?
Partial	No	No	Yes	Yes	Yes	Yes

In sum, other theories of military learning did not provide satisfactory explanations for the character of the learning we see post-Tomodachi, the rate of learning, and the conditions

[129] Kevin Schaeffer (2017, January), Personal Interview.

under which learning occurred. Thus, given that we see informal and formal learning processes

at work, as well as institutionalized learning processes, it is reasonable to conclude that

institutionalization theory offers the best explanation for military learning post-Tomodachi.

Chapter VI
Further Implications of this Research

Summary of Results

This paper has shown: 1) despite low expectations for learning, the military learns in HA/DR operations; 2) the military exhibits improved learning over time in these operations; and 3) where traditional explanations for military learning fall short, institutionalization theory provides a compelling explanation for why and how the military learned in these operations. This paper synthesizes bureaucratic and cultural explanations for learning to propose an alternative theory. This theory, which I call institutionalization, argues that the military's institutionalized learning mechanisms and a learning ethos induce learning no matter the operational context. Thus, we see learning even in an operational context absent traditional incentives to learn. These findings have implications for future military operations and potential research, which will be discussed below.

Implications for Future Disaster Relief Operations

Every year, the United States conducts a dozen disaster relief operations. With global warming as a stimulus, the number of these operations is expected to increase. As policymakers continue to conduct disaster relief operations, they would do well to consider promoting the military's role to one of primary leadership. The modern American military is multifunctional, and therefore, policymakers might be hesitant to assign the military another task. Yet, this thesis shows that even on limited resources and time, the military can perform increasingly well at disaster relief. This is not to say that other organizations should not lead aspects of the operation, but rather to emphasize that the military's capacity to learn during HA/DR may warrant a larger

role in planning and conducting these operations. The military's non-HA/DR training and learning ethos have equipped it with the tools to conduct increasingly successful operations. The findings of this thesis suggest that the military's learning mechanisms induce simple operational fixes, transfer lessons across operational contexts (i.e. 'spillover learning'), and increase its rate of learning overtime. These mechanisms, then, lead to larger structural changes.

After Operation Unified Assistance, the military exhibited several indicators of limited learning, including small scale doctrinal, institutional, and practical fixes. Additionally, in the time period between Operation Unified Assistance in 2004/2005 and Operation Tomodachi in 2011, members of the military saw an increase in interorganizational operations. The lessons generated in Operation Unified Assistance were applied in Operation Tomodachi and in later operations. It was post-Tomodachi, though, when the military saw larger gains from simple fixes and spillover learning, but also larger structural changes in the way it conducts HA/DR. Instead of viewing these operations as largely reactionary, the military adopted a 'capacity building' model. In this model, the military aims to increase the resilience of nations, equip them with the tools necessary to react with less American assistance, and build relationships ahead of time with those actors in order to prepare for future HA/DR operations and cooperation on the ground. In multiple operations since its implementation, this model has performed well. While not the focus on this thesis, the 2013 response in the Philippines has been hailed as the paragon of HA/DR operations. The operation went smoothly, left the nation's infrastructure better than it was before, and helped the nation build its own resilience so that when a similar disaster struck in 2014, the nation could respond on its own with little American assistance.

Implications for the Military as a Learning Organization

In an interesting twist, HA/DR operations provide an ideal context for the military's military learning structure. First, the reflective nature of the military's learning process lends itself to operations that are repeated over and over again, similar in content and character. The institutional learning mechanisms that the military has adopted, like the AAR, are primarily reflective. This means that 'lessons' or operational deficiencies must have *already* occurred before the military can fix them. As such, this system works best when follow-on operations are similar-- this way, the failures of past operations can be improved upon for future operations. The military's role in HA/DR operations is largely consistent throughout different disasters. Even in contexts as different as Indonesia and Japan, the military's role was primarily one of logistical assistance and aid distribution. The military improved from one disaster to the next because the operations were remarkably similar in character.

Second, the AAR process works best when conducted at the end of an operation, after the chaos has settled and actors can effectively reflect on their experiences. For an AAR, all actors discuss successes and failures and produce recommendations for future operations. Such a reflection is an impossible task when aspects of the operation are still underway. For example, the wars in Iraq and Afghanistan are ongoing, long term operations. It is difficult to reflect upon them and to draw substantial lessons from them while the fog of war continues on. However, for HA/DR operations, there is a designated 'start' and 'end' point. The end point allows the military to stop, reflect upon what just happened, and improve itself for follow-on operations.

This leads to another question: can the military export the HA/DR model to increase military learning in other operations? If so, under what circumstances might the HA/DR model

of learning apply? Where might it fall short? As mentioned above, the HA/DR model of learning likely will do poorly in an ongoing-conflict setting. The wars in Iraq, and Afghanistan, for example, each lack a clear end date and involve an ever-evolving enemy. Due to the volatile, fluctuating nature of these conflicts, military personnel are unable to fix problems that are still occurring in real time. The operations of 2003 Iraq look dramatically different from those of 2005 Iraq, whereas Operation Unified Assistance looks remarkably similar to Operation Tomodachi, Damayan, etc. For these reasons, we would expect less learning to emerge from these operations than HA/DR. However, HA/DR methodology can still be useful because there are operations, like HA/DR, that are repetitive and largely consistent, particularly at the tactical level. For example, conducting a night raid or launching a peacekeeping operation.

On the other hand, could HA/DR be used to preview operational frameworks and strategies before they are implemented in combat zones? While exporting the HA/DR model of learning in other situations might be difficult, I propose that HA/DR nonetheless present a unique opportunity for military learning. HA/DR operations provide the military with a relatively safe, low-pressure environment that can function as a laboratory for new ideas. The military could use HA/DR operations to test new command structures, communication processes, and strategic initiatives. Due to the repetitive nature of HA/DR, the military will be able to evaluate and correct the deficiencies of these operations in an iterative process. These lessons will become an invaluable tool for the military as it engages nimble, adaptive enemies that will not wait for lessons to be learned. Lessons learned from such operations could yield substantive benefits for the military when they are transferred to riskier, violent operations.

Further Puzzles and Call for Future Research

This thesis focuses on operations conducted out of the PACOM combatant command. Nonetheless, I interviewed individuals who worked on operations out of Southern Command and Central Command. From these interviews and consequent research emerged new findings. Interviews with military personnel who worked on Operation Unified Response in Haiti in 2010 indicate that the operation benefited little from PACOM's previous lessons learned. This suggests that, at least under some conditions, learning does not transfer well across combatant commands, but rather is siloed and must be relearned. This is puzzling because, although a combatant command is stagnant, military personnel are not. Personnel from unit to unit and often transfer across combatant commands in order to foster combat readiness. This is the first puzzle: why and how, then, might lessons get lost?

This thesis has evaluated the lessons learned from an operation rather than the objective success of it. However, interviews with individuals at different combatant commands suggest that some combatant commands lend themselves to better HA/DR operations than others. That is, some operational environments are more conducive to learning than others. One HA/DR operation that went particularly well was the American response to the 2010 Monsoon Flooding in Pakistan. Lieutenant General Nagata and Colonel (Ret.) Cosby both emphasized the operational benefits of having a pre-existing working relationship with the Pakistanis. U.S. Army Pakistan was able to leverage years of security cooperation and counter-Taliban operations to increase their the operating environment. By 2010, military personnel operating in Pakistan had strong relationships with Pakistani counterparts and an intimate knowledge of the civilian

population, infrastructure, and geography. This knowledge is key to conducting HA/DR operations.

The success of some operations over others raises a second puzzle-- under what conditions might HA/DR operations be best conducted? Most military personnel would agree that a violent operational context complicates peaceful operations. That is, it is more challenging to conduct HA/DR operations in countries with active violent conflicts. However, the Pakistan story suggests otherwise, that there might be substantial operational benefits to conducting operations other than war in a violent operational context.

Therefore, I recommend that future researchers investigate these puzzles in order to refine our understanding of military learning. Knowing how and why lessons are learned and lost is critical to developing a prepared, agile force for the 21st century.

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List and Description of Interviewees

	MILITARY PERSONNEL		
	NAME	**ORGANIZATION**	**ROLE**
1	Colonel(ret.) William Cosby	U.S. Army Pakistan	J3 Planning Team, Foreign Area Officer
2	Admiral Thomas Fargo	PACOM	Commander
3	Lieutenant General Burton Field	U.S. Forces Japan	Commander
4	Lieutenant General Ken Glueck	3rd Marines Expeditionary Force	Commander
5	Lieutenant General Ken Keen	Southern Command	Deputy Commander
6	Lieutenant Colonel Rodney Legowski	3rd Marines Expeditionary Brigade	Operational Planner
7	Lieutenant Colonel Licina	Tripler Medical Center	Army Doctor (past, Office of Secretary of the Defense)
8	Jason King	PACOM	Liaison from Canadian Armed Forces
9	Lieutenant Colonel Thomas Matelski	PACOM	Deployable Joint Force Augmentation Cell (J-35)
10	Rear Admiral Mark C. Montgomery	PACOM	Director for Operations (J3)
11	Lieutenant General Michael Nagata	U.S. Army Pakistan	Deputy Chief, Office of the Defense Representative to Pakistan (ODRP)
12	Major John Nonnemaker	PACOM	Civil Affairs Outreach (J9)
13	Lieutenant Colonel Michael Reilly	PACOM	Operational Planner
14	Colonel Douglas Sevier	U.S. Air Force, Yokota Air Force Base	Deputy Commander, 374th Operations Group, Airlift
15	Lieutenant Commander Kevin Schaeffer	PACOM	Operations Officer (J3)
16	Major General Steven Rudder	PACOM	Director for Strategic Planning and Policy (J5)
17	Vice Admiral Scott Van Buskirk	7th Fleet	Commander
18	Lieutenant Colonel Chad Witherell	PACOM	Civil Affairs Division Chief (SOJ38)
19	Major General Darryl Wong	Hawaii National Guard	The Adjutant General, Hawaii

	CIVILIAN GOVERNMENTAL PERSONNEL		
	NAME	**ORGANIZATION**	**ROLE**
20	Warren Acuncius	USAID/OFDA	Disaster Response Planner
21	Alan Aoki	Center for Excellence (CFE)	Research Analyst
22	James Brown	UNOCHA	Disaster Response, Humanitarian Advisor
23	Mrko Crnovich	USAID/DCHA/Office of Civil-Military Cooperation	Deputy Director and Chief of Plans and Policy Division
24	Ben Hemingway	USAID/OFDA	Regional Advisor, Thailand
25	Joseph Martin	CFE (retired USAF)	Director
26	Veronika Martin	USAID/OFDA	Analyst
27	Trevor Monroe	CFE	Assessment Analyst
28	Dr. Alberto Morales	CFE	Executive Officer
29	Ambassador Lauren Moriarty	U.S. Department of State	Ambassador to Asia Pacific Economic Council
30	Ambassador B. Lynn Pascoe	U.S. Department of State	Ambassador to Indonesia
31	Lloyd Puckett	CFE	Analyst
32	Robert Reyes	CFE	Civ-Mil & HADR Plans Officer, Mission Support Services
33	Jim Ruf	United States Institution of Peace	Senior Program Officer
34	Jesse Wolfe	CFE (retired USMC)	Analyst
35	Major General Darryll Wong	Hawaii National Guard	Adjutant General
36	Ambassador James Zumwalt	U.S. Embassy Japan	Deputy Chief of Mission
	CIVILIAN NON-GOVERNMENTAL PERSONNEL		
	NAME	**ORGANIZATION**	**ROLE**
37	Jared Batzel	Pacific Disaster Association	PACOM Liaison
38	Christina Davis	Mission to the World	Director of Global Disaster Response

39	Brian Michelson	The Atlantic Council	U.S. Army Fellow
40	Lauren Rajczak	Interaction	Security Coordinator