



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**THE GOD PROTOCOL: IN SEARCH OF A COMMON
ETHICAL APPROACH TO DISASTER RESPONSE**

by

Eric D. Soucie

December 2018

Co-Advisors:

Thomas D. Young
Anders Strindberg (contractor)

Approved for public release. Distribution is unlimited.

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE December 2018	3. REPORT TYPE AND DATES COVERED Master's thesis		
4. TITLE AND SUBTITLE THE GOD PROTOCOL: IN SEARCH OF A COMMON ETHICAL APPROACH TO DISASTER RESPONSE			5. FUNDING NUMBERS	
6. AUTHOR(S) Eric D. Soucie				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) The evolution of domestic disaster response within the United States has created a dissonance between the capabilities of response resources and public expectations. Resource shortages in a catastrophe will compel decision-makers in disaster response organizations at all levels of government to make difficult choices. Given America's social contract, the ethical foundation for these choices should be common and consistent between the various actors. This research provides a primer on the abstracta (philosophical) and concreta (practical) issues impacting ethical choices about the allocation and distribution of food and water in response to a catastrophe. A single case study reviewing the Cascadia Subduction Zone provides a focused, threaded scenario to illustrate the interplay of the philosophical and practical issues. The research and application within the case study found that while the social contract creates both rights and expectations, government response cannot be assessed solely on the basis of quantifiable outcomes. The measure of effectiveness for response remains largely socially constructed due to the discursive framing by the various actors involved in disaster response. While a common ethical approach may be overly ambitious, this thesis recommends various procedural remedies to achieve greater consonance in ethical approaches.				
14. SUBJECT TERMS ethics, disaster response, logistics, emergency management, allocation, social contract, economics, philosophy, earthquake, natural disaster, catastrophe			15. NUMBER OF PAGES 169	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release. Distribution is unlimited.

**THE GOD PROTOCOL: IN SEARCH OF A COMMON ETHICAL APPROACH
TO DISASTER RESPONSE**

Eric D. Soucie
Deputy Planning & Preparedness Section Chief, FEMA Office of National Capital
Region Coordination, Department of Homeland Security
BA, George Washington University, 2008

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
December 2018**

Approved by: Thomas D. Young
Co-Advisor

Anders Strindberg
Co-Advisor

Erik J. Dahl
Associate Chair for Instruction
Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

The evolution of domestic disaster response within the United States has created a dissonance between the capabilities of response resources and public expectations. Resource shortages in a catastrophe will compel decision-makers in disaster response organizations at all levels of government to make difficult choices. Given America's social contract, the ethical foundation for these choices should be common and consistent between the various actors. This research provides a primer on the *abstracta* (philosophical) and *concreta* (practical) issues impacting ethical choices about the allocation and distribution of food and water in response to a catastrophe. A single case study reviewing the Cascadia Subduction Zone provides a focused, threaded scenario to illustrate the interplay of the philosophical and practical issues. The research and application within the case study found that while the social contract creates both rights and expectations, government response cannot be assessed solely on the basis of quantifiable outcomes. The measure of effectiveness for response remains largely socially constructed due to the discursive framing by the various actors involved in disaster response. While a common ethical approach may be overly ambitious, this thesis recommends various procedural remedies to achieve greater consonance in ethical approaches.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	PROBLEM STATEMENT	1
B.	RESEARCH DESIGN	3
1.	Data Sources	4
2.	Outcomes	4
C.	CHAPTER OVERVIEW	4
II.	LITERATURE REVIEW	7
A.	MORAL PHILOSOPHY AND THE SOCIAL CONTRACT	7
B.	PROFESSIONAL CODES OF CONDUCT	16
C.	GOVERNANCE.....	18
D.	DISASTER SOCIOLOGY	20
E.	DISASTER RESPONSE AS RISK MANAGEMENT	23
F.	PRINCIPLES OF ALLOCATION AND SCARCITY	24
III.	THE PHILOSOPHICAL BASIS FOR DISASTER RESPONSE	27
A.	DISASTERS AND GOVERNMENT LEGITIMACY	27
B.	FEDERALISM: ETHICS BY DESIGN.....	31
1.	The Individual	31
2.	The Local Jurisdiction.....	40
3.	The State Government.....	45
4.	The Federal Government	47
C.	CLERKS IN THE MACHINE	51
D.	MEDIA IN THE MIDDLE	56
IV.	PRACTICAL EVILS.....	61
A.	HOW WE DECIDE	61
B.	THE SCIENCE OF SCARCITY.....	66
1.	Information Problems	67
2.	Trade-Offs	69
C.	THE TYRANNY OF DISTANCE.....	74
1.	Catastrophic Sourcing.....	75
2.	Strategic Movement	80
3.	Last-Mile Distribution	82
D.	PHYSIOLOGICAL NEEDS AFTER A DISASTER	91
1.	Hydration.....	93
2.	Feeding	97

V.	CASE STUDY SCENARIO: CASCADIA RISING	101
A.	ESTIMATING NEEDS	102
1.	Water.....	102
2.	Meals	104
B.	PLANNING AND PREPAREDNESS.....	105
1.	Initial Response (Push).....	108
2.	State Push	111
C.	SUSTAINED RESPONSE (PULL)	112
D.	THE SCALING BACK	117
VI.	CONCLUSION	119
A.	THE PARADOX OF THE SECOND STATE OF NATURE.....	119
B.	RECOMMENDATIONS.....	122
1.	Rethink Our Preparedness Campaigns	122
2.	Integrate Design Thinking into Disaster Planning at All Levels.....	123
3.	Reinvigorate and Redesign the Civil Defense Warden System	124
4.	Consider Making Exceptions to the Rule: The Rules in Catastrophes.....	125
	LIST OF REFERENCES.....	127
	INITIAL DISTRIBUTION LIST	149

LIST OF FIGURES

Figure 1.	Spatial Model of Convergence Behavior	81
Figure 2.	Federal ESF-7 Concept of Support	107
Figure 3.	FEMA Distribution Centers (U.S. Mainland).....	110

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS AND ABBREVIATIONS

CSZ	Cascadia Subduction Zone
DALYs	disability-adjusted life years
DoD	Department of Defense
DSCA	Defense Support to Civil Authorities
ESF-7	Emergency Support Function #7
FEMA	Federal Emergency Management Agency
FIOP	Response Federal Interagency Operational Plan
FNS	Food and Nutrition Service (Department of Agriculture)
GAO	Government Accountability Office
IAEM	International Association of Emergency Managers
MRE	Meal, Ready-to-Eat
NIMS	National Incident Management System
NRF	National Response Framework
OEM	Office of Emergency Management
POD	point of distribution
QUALYs	quality-adjusted life years
RFI	request for information
TAG	Adjutant General
THIRA	<i>Threat and Hazard Identification and Risk Assessment Guide</i>
UN	United Nations
USDA	U.S. Department of Agriculture
USPS	United States Postal Service

THIS PAGE INTENTIONALLY LEFT BLANK

EXECUTIVE SUMMARY

Domestic disaster relief in the United States has undergone various changes in terms of public expectations, legal authorities, and operational approaches over the last several decades. Some have argued that this trend has gone too far, while others argue it has not gone far enough in placing a particular burden, by way of expectation, on government—especially at the federal level—to gird us for catastrophe. Philosophers, practitioners, politicians, preachers, reporters, and average citizens all have their own views on the subject, informed by their unique circumstances and sources of knowledge. This thesis is an attempt to bring together these various disciplines as common sources of knowledge. My aim is to demonstrate, through this search for a common ethical approach, the dialectic between the physical and the metaphysical, and move all partners toward a more common understanding and a greater consonance of views.

Extant guidance in the U.S. domestic disaster response environment makes only passing mention of ethics or values. There are few examples of easy-to-use, accessible ethical frameworks to approach resource allocation. While these few examples allow communities to adopt ethical frameworks that best adhere to their values, the scarcity of examples also leaves open the possibility that a community may not adopt any ethical framework at all. Without a filter through which to pass values-laden questions, disaster response will be planned through mechanistic and bureaucratic processes. Given the limited time for ethical reflection during a crisis—especially if these frameworks are not developed in advance of a disaster—both elected leaders and public safety officials are exposed to questions about the sufficiency of their actions and the legitimacy of their authority.

This thesis attempts to answer the question: Is it possible to establish a common ethical approach to resource allocation in response to a catastrophic disaster? It does this by providing two primers that build upon the literature review, the first on the philosophical basis for ethics in disaster relief, and the second on the concrete, practical realities, or evils, of disaster relief, which are often in conflict with abstract philosophies. Philosophers, sociologists, and political scientists describe broad phenomena related to human activity,

the ways we think, and the ways in which we engage with each other. While disaster response is an inherently action-oriented profession, an understanding of the philosophical basis for domestic disaster relief is critical to setting parameters for any action. The first primer provides an overview of the *abstracta* related to disaster relief in the United States. These *abstracta* include not only elements of moral philosophy (ethics) but also elements of the social contract, the implications of America's federalist system, religion, the bureaucracy, and media and the public sphere. The second primer recognizes, however, that human activity is governed by stricter practical realities, referred to as *concreta*, such as neuroscience, physics, geography, biology, human physiology, and economics. The interplay of these practical forces creates additional evils that are fundamental to understanding the ethical implications of disaster relief in a real-world context.

A single case study reviewing the Cascadia Subduction Zone (CSZ) provides a focused, threaded scenario to illustrate the interplay of the philosophical and practical issues. This case study is designed to put the reader in the mind of the survivor, as well as in the minds of local, state, and federal emergency management officials. By doing this, it builds a framework around disaster logistics focused on empathy, considering the practical and ethical dilemmas faced during each phase by key stakeholders. The CSZ is named for a nearly 800-mile long area along the coast of the Pacific Northwest. The U.S. Geological Survey notes that earthquakes as recent as 300 years ago show the potential of a "great earthquake" and tsunami along the CSZ.¹ When the CSZ fault line ruptures, the North American plate will actually drop up to 30 feet, producing that earthquake. A full rupture could generate a 9.2-magnitude earthquake, with shaking lasting for up to five minutes, generating a Pacific-wide tsunami with waves ranging from 12 to 80 feet high. Those waves could reach the U.S. and Canadian coast 10 to 30 minutes after the shaking begins. According to modeling data, the Federal Emergency Management Agency (FEMA) expects roughly 13,000 fatalities, and double that number in injuries, during a disaster of

¹ Laura Zink Torresan, "Cascadia Earthquakes and Tsunami Hazards Studies," U.S. Geological Survey, July 15, 1998, <https://walrus.wr.usgs.gov/earthquakes/cascadia/>.

this magnitude.² Life-saving missions will take priority in the immediate hours and days following the event, with search and rescue teams and medical teams probing into the hardest hit areas, covering a geographic area of 100,000 square miles.

With media coverage from major national magazines like *The New Yorker* and *The Atlantic* in recent years, the media, with the help of worried government officials, have raised the specter of this great earthquake in the American consciousness. Experts disagree on the exact timing, but generally agree on the looming potential for catastrophe. There seems to be a consensus among experts, best expressed in a report by Oregon's Secretary of State, that "There is no way to prevent such an event from happening."³ With that air of inevitability, CSZ is both a useful thought experiment to illustrate ethical dilemmas and a practical lesson for a likely worst-case disaster.

The case study research and application found that while the social contract creates both rights and expectations, government response cannot be assessed solely on the basis of quantifiable outcomes. The measure of effectiveness for response remains largely socially constructed due to the discursive framing by the various actors involved in disaster response. The media can drive the debate during the response, while citizens, both near and far from the disaster area, can pass judgment on government performance at the ballot box. While a common ethical approach to disaster response may be overly ambitious, this thesis recommends various procedural remedies to achieve greater consonance in ethical approaches. The following general procedural remedies are recommended to move U.S. domestic disaster relief toward a more common ethical approach.

(1) Rethink Our Preparedness Campaigns

Messaging before a disaster should be reconfigured in a way that is relevant to the specific issues and impacts that a community might face after various types of disasters, and that messaging should be realistic.

² Kathryn Schulz, "The Really Big One," *The New Yorker*, July 20, 2015, www.newyorker.com/magazine/2015/07/20/the-really-big-one.

³ Dennis Richardson and Kip Memmott, "The State Must Do More to Prepare Oregon for a Catastrophic Disaster" (report 2018-03, January 2018, State of Oregon), 2, <http://sos.oregon.gov/audits/Documents/2018-03.pdf>.

(2) Integrate Design Thinking into Disaster Planning at All Levels

Domestic disaster relief demands that the user perspective from which we design our plans must contain a degree of empathy for each and every individual citizen. This helps reinforce the social contract and provides a unique way to engage citizens.

(3) Reinvigorate and Redesign the Civil Defense Warden System

Wardens would be trained in risk assessment, to understand the threats and hazards faced by their community, and in the analytical models and information sources that should inform action before, during, and after a disaster. Rather than the artificiality of receiving information of questionable veracity on the internet, through mass media, or by word of mouth, the warden becomes a natural mode of trust for those in his or her ward.

(4) Consider Making Exceptions to the Rule: The Rules in Catastrophes

Plans need to assume that existing rules, policies, or practices will be waived, exempted, or simply ignored during a crisis. State and local planners could benefit from a similar cataloging of waivers and exemptions. Plans should reflect more courses of action, or “plays” that have been used successfully in past disasters; the plans should lay out both practical and ethical risks, with a menu of options for policy changes (or, in extreme circumstances, changes to law during the crisis). Through indexing waivers, exemptions, exceptions, and the litany of practical and ethical pitfalls facing specific operational approaches, emergency plans could not only provide officials with broader decision-making authority but also retain guardrails that reflect hard limits on ethical values.

ACKNOWLEDGMENTS

First and foremost, I would like to thank my family and friends for their continued support during this program and for tolerating my rambling (and often incomprehensible) monologues about my thesis. For my FEMA colleagues, the same apology to you.

To Josh Dozor and Tom Breslin, I would like to thank you for your mentorship and trust in me as an emergency manager. You both pushed me to do some weird, wonderful, and frustrating assignments across the emergency management and homeland security enterprise over the past several years. Thank you for your patience as I slowly develop the ability to navigate between how things should be done and getting things done while still recognizing that we can do better.

Thanks also to Joe Burchette, who, while he doesn't see himself as a planner, has a savant-like ability to assess risk and determine courses of action. I would like to thank him for dealing with half a staff resource while I was in this program. I would also like to thank him for his mentorship by generously sharing with me his nearly two decades of experience in disaster operations and logistics, and allowing me a front-row seat to see its application during the historic 2017 hurricane season.

To my fellow cohort members of CHDS 1611, I am honored and humbled to have met you, learned from you, and developed friendships with you. Each of you, in some way, helped me through this program, and contributed toward this thesis. I am in awe of the work you all do every single day, and the brilliance, creativity, and sense of duty you bring to that work in increasingly uncertain times.

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

Domestic disaster relief in the United States has undergone various changes in terms of public expectations, legal authorities, and operational approaches over the last several decades. Some have argued that this trend has gone too far while others argue it has not gone far enough in placing a particular burden, by way of expectation, on government—especially at the federal level—to gird us for catastrophe. Philosophers, practitioners, politicians, preachers, reporters, and average citizens all have their own views on the subject, informed by their unique circumstances and sources of knowledge. This thesis is an attempt to bring together these various disciplines as common sources of knowledge. My aim is to demonstrate, through this search for a common ethical approach, the dialectic between the physical and the metaphysical, and move all parties toward a more common understanding and a greater consonance of views.

A. PROBLEM STATEMENT

In a catastrophic disaster scenario, responders at the federal, state, and local levels will face resource shortages. Catastrophes are unique in comparison to other types of disasters. Their unique characteristics include not only standard resource allocation protocols but also the political, media, and economic implications of resource shortages. Resources may include items commonly needed by disaster survivors in the immediate hours and days following a catastrophic disaster, such as water, food, cots, tarps, generators, and medical supplies. These shortages may be caused not only by nationally limited supply but also by bottlenecks or gaps in the distribution networks brought about by the very design of those systems, as well as by the unique impacts of the disaster.

The allocation of resources is a critical problem in a rapidly evolving, complex environment with competing priorities. Resource allocation is based both on an identified need and a value judgment about the worthiness of the recipient. Critical resource allocation for disaster response is problematic because the nature and speed of disaster response allows limited time for ethical reflection. The value of ethical deliberation, however, is that it benefits the individual survivor—or recipient of a scarce resource—and

reinforces the social contract. The social contract is, in short, the agreement between a government and those it governs regarding mutual responsibilities, expectations, and obligations.

The disaster response environment suffers from problems of economics such as information asymmetry, and the concentric and overlapping spheres of governance create rifts in a values-based social contract. In other words, different levels of government may use different ethical approaches. Resource providers (federal to state, mutual aid, state to local, etc.) can “push” resources by deploying and staging them close to an incident, but employment—actually putting those resources to use—is traditionally based on a “pull” request from the receiving jurisdiction.

Assessing need in this system becomes a problem due to the structure of the U.S. federal system, which hampers consistent application of ethical principles. The National Response Framework (NRF) stresses the concept of “tiered response,” which observes that “most incidents begin and end locally.”¹ This is a key component underpinning the federalist nature of the United States’ domestic disaster response system. The NRF also asserts that “the public safety and welfare of a state’s residents are the fundamental responsibility of every governor.”² Inversely, the federal government must trust that a state or local jurisdiction is requesting resources in support of its survivors in a manner consistent with the way the federal government alone would handle those survivors’ needs. These divergent approaches create two unique issues with establishing a common ethical approach to supporting disaster survivors. The first issue arises in the resource provider (from this perspective, the federal government) assessing the worthiness of the recipient (a state or local government) to receive scarce resources based on one type of ethical approach (e.g., highest impacts, highest vulnerability). The second comes from a governor’s or local chief executive’s responsibility to provide for the safety and welfare of his or her constituents. While coordination between levels of government is a key tenet of domestic

¹ Federal Emergency Management Agency (FEMA), *National Response Framework, Third Edition* (Washington, DC: Department of Homeland Security, 2016), 6.

² FEMA, 13.

incident management policies and frameworks, the realities of the crisis environment pose difficulties in application.

Extant guidance in the U.S. domestic disaster response environment makes only passing mention of ethics or values. There are few examples of easy-to-use, accessible ethical frameworks to approach resource allocation. While these few examples allow communities to adopt ethical frameworks that best adhere to their values, the scarcity of examples also leaves open the possibility that a community may not adopt any ethical framework at all. Without a filter through which to pass values-laden questions, disaster response will be planned through mechanistic and bureaucratic processes. Given the limited time for ethical reflection during a crisis—especially if these frameworks are not developed in advance of a disaster—both elected leaders and public safety officials are exposed to questions about the sufficiency of their actions and the legitimacy of their authority. Therefore, this thesis answers the following research question: Is it possible to establish a common ethical approach to resource allocation in response to a catastrophic disaster?

B. RESEARCH DESIGN

This thesis examines the Cascadia Subduction Zone (CSZ) catastrophic earthquake and tsunami exercise scenario as a single-case research subject.³ Given the potential ethical dilemmas that the CSZ scenario could present, using it as the basis for this research allows a focused approach to the complexities that could flow from this single incident. Due to the complex disaster response considerations presented by this scenario, this examination helps expose the interactions of significant variables. Within the threaded narrative of this catastrophic scenario, the intent is to find similar situations, in the context of both domestic and international disaster relief, where ethical dilemmas have presented. Specifically, the research focuses on the human need for food and water, and the ethical and practical dilemmas that this need presents at various phases in the preparedness for, and execution

³ Oregon Office of Emergency Management, “Cascadia Rising: Cascadia Subduction Zone (CSZ) Catastrophic Earthquake and Tsunami” (exercise scenario document, January 2015, State of Oregon), http://www.oregon.gov/oem/Documents/Cascadia_Rising_Exercise_Scenario.pdf.

of, disaster response operations. This approach helps provide a theoretical, yet plausible, real-world application for the various ethical theories I explore.

1. Data Sources

The data sources for this research include the following:

- government reports
- surveys
- newspaper articles
- journal articles
- books
- policies, regulations, and laws.

2. Outcomes

The intended output of this thesis was to determine whether or not a common approach to ethical resource allocation is possible in the aftermath of a catastrophic disaster. From themes or lessons that can be extracted from this single case study of the CSZ scenario, this thesis provides recommendations for emergency management practitioners that can be applied at the strategic and operational levels.

C. CHAPTER OVERVIEW

- **Chapter I** introduces the issues posed by differences in ethical approaches during disaster response
- **Chapter II** examines the relevant academic literature underpinning our exploration of the possibility of a common ethical approach to resource allocation in response to a catastrophic disaster.
- **Chapter III** serves as a basic primer on *abstracta*: ethics, the social contract, and the philosophical basis for domestic disaster relief.

- **Chapter IV** serves as the primer on *concreta*: practical evils, including human psychology, economics, geography, and physics.
- **Chapter V** is the case study that integrates the literature review and primers into a plausible worst-case scenario
- **Chapter VI** is the conclusion, which applies understanding of these issues to specific recommendations for emergency managers to implement at the strategic-operational level

THIS PAGE INTENTIONALLY LEFT BLANK

II. LITERATURE REVIEW

This literature review examines the academic literature surrounding the possibility of a common ethical approach to resource allocation in response to a catastrophic disaster. This review is separated into five sections. The first section examines how the social contract in the American tradition is linked to ethical foundations. The second section explores the professional ethical codes of conduct that exist in the disaster relief context, and how they relate to broader moral philosophy. The third section covers relevant literature on the legal, political, and governmental theories behind the nature of the federal government's authority to conduct disaster response activities. The fourth section examines the human element of disaster response by reviewing various sociological texts related to human behavior during disasters. The fifth section outlines the broad theories and guidance behind government risk management in disaster response, including generally accepted procedures for managing risk. The sixth and final section outlines the economic problem of scarcity and introduces principled approaches used to make ethical resource management decisions.

A. MORAL PHILOSOPHY AND THE SOCIAL CONTRACT

The American tradition of the social contract is inextricably linked to the history of Western civilization and the development of its philosophies. Ethical philosophy can be roughly divided between means-based ethics (including those based in either rules or virtue) and ends-based ethics (consequentialist). At its core, ethical philosophy is focused on creating “goodness.”

Classical Greece (500–400 BCE) provides us with the earliest traces of modern philosophy. One philosopher from this era, Socrates, is often credited with the establishment of Western philosophy. As his student Plato said, Socrates's mission was to serve as a gadfly to the political establishment in Athens, questioning prevailing assumptions not based in fact or reason.⁴ Socrates firmly believed that there is “only one

⁴ Plato, “Apology,” MIT, accessed June 19, 2018, <http://classics.mit.edu/Plato/apology.html>.

good, that is, knowledge, and only one evil, that is, ignorance.”⁵ From this, we begin to discern the beginnings of moral philosophy in Western civilization—seeking the “good.” Plato, for his part, advocated two concepts of particular relevance to the social contract. The first was the formalization of the dialectic, in which Plato framed conversations between Socrates and others as a truth-seeking endeavor. Through shared inquiry and discussion, based in logic, one could arrive at the truth. This is a concept that is consistent for most Enlightenment and post-Enlightenment philosophers (with the notable exception of Nietzsche). The second concept, rooted in the first and often referred to as The Five Regimes, was a comparative analysis of five different types of government and the character of the individuals who would support such a government. Interestingly, Plato (acting as Socrates), settles on an aristocracy as the “government of the best,” and promotes the idea of a “philosopher-king.”⁶ This king would be an unelected leader, and would have broad authority over matters of the state. Aristotle, a student of Plato’s, is credited with formalizing the concepts of epistemology and logic.⁷ Aristotle noted that, for all professions, “every practical pursuit or undertaking ... seems to aim at some good.”⁸

Aristotle was also the first to propose the concept of virtue ethics, which focuses on the character of an individual. “He believed humans are not naturally born with character but that we develop it over time as a sort of normative wisdom.”⁹ During the thirteenth century, Thomas Aquinas, considered a saint by the Catholic Church, advocated a philosophy with the epistemic foundation that truth comes from God. Aquinas set out a series of principles as a subset of virtue ethics, which underpin much of what we consider

⁵ Diogenes Laertius, *The Lives of Eminent Philosophers*, ed. R.D. Hicks (Cambridge, MA: Harvard University Press, 1972), 31, <http://www.perseus.tufts.edu/hopper/text?doc=urn:cts:greekLit:tlg0004.tlg001.perseus-eng1:2.5>.

⁶ Plato, “The Republic, Book VIII,” in *Plato in Twelve Volumes*, trans. Paul Shorey (Cambridge, MA: Harvard University Press, 1969), <http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg030.perseus-eng1:8>.

⁷ Internet Encyclopedia of Philosophy, s.v. “Aristotle,” accessed June 19, 2018, www.iep.utm.edu/aristot/.

⁸ Aristotle, *Nicomachean Ethics*, trans. H. Rackham (Cambridge, MA: Harvard University Press, 1934), 1094, <http://data.perseus.org/citations/urn:cts:greekLit:tlg0086.tlg010.perseus-eng1:1094a>.

⁹ Aristotle, *Nicomachean Ethics*, Translated by H. Rackham (Cambridge, MA: Harvard University Press, 1934), Book 2, Chapter 1, Section 2, <http://data.perseus.org/citations/urn:cts:greekLit:tlg0086.tlg010.perseus-eng1:2.pos=15.2>.

today as Catholic religious morality. His first principle is simply: “Good is to be done and promoted, and evil is to be avoided. All other precepts of the natural law are based on this.”¹⁰ Another principle, which is equally applicable to both governments and individuals, was his “principle of the double effect” for his use of the phrase “a double effect of grace.”¹¹ According to this principle, an individual can be motivated by divine virtues (“operating grace”), which by itself is a good effect, but that act can also produce an incidental good effect (“cooperating grace”). In Aquinas’s interpretation, as long as the will was moved by God, regardless of whether the incidental effect was good or bad, the act can still be judged a “meritorious work.”¹² Virtue ethics was also introduced outside of the Western tradition. In ancient China, Confucius proposed a set of virtuous principles for human ethical behavior. However, Martha Nussbaum, a modern critic, observes that both deontology and utilitarianism exhibit virtues in the relevant works, and recommends that “we do away with the category of ‘virtue ethics’ in teaching and writing.”¹³

Even if virtue ethics is not distinct from deontology or utilitarianism, the realist worldview of consequentialism eschewed virtue in all its forms. During the sixteenth century, at a time when the Italian city-states were under attack by their neighbors, Niccolò Machiavelli wrote political strategy for the Medici family to unite them in common defense. Under threat of invasion, Machiavelli mocked the virtues of weaker leaders, writing, “For a man who wishes to profess goodness at all times will come to ruin among so many who are not good.”¹⁴ Thomas Hobbes expanded on this philosophy during the seventeenth-century English Civil War. His dismal view of the state of nature describes the absence of government as a “Warre [war] of Everyone Against Everyone,” wherein, “the

¹⁰ St. Thomas Aquinas, “Whether the Natural Law Contains Several Precepts, or Only One?” in *Summa Theologica* (Christian Classics Ethereal Library, 2005), http://www.ccel.org/ccel/aquinas/summa.FS_Q94_A2.html#FS_Q94_A2-p7.

¹¹ St. Thomas Aquinas, “Whether Grace Is Fittingly Divided into Operating and Cooperating Grace?” in *Summa Theologica* (Christian Classics Ethereal Library, 2005), http://www.ccel.org/ccel/aquinas/summa.FS_Q94_A2.html#FS_Q94_A2-p7.

¹² Aquinas.

¹³ Martha C. Nussbaum, “Virtue Ethics: A Misleading Category?” *The Journal of Ethics* 3, no. 3 (1999), 163–201.

¹⁴ Niccolò Machiavelli, *The Prince* (New York: Oxford University Press, 1998), 52, <https://doi.org/10.1023/A:1009877217694>.

life of man [is] solitary, poore, nasty, brutish, and short.”¹⁵ Hobbes was a utilitarian consequentialist, who believed that the only way to rein in man’s natural state of terribleness was for the ruler of a commonwealth to provide consequences, which would implement the “true and only” moral philosophy. Individuals aligned only for the purposes of self-interest. Hobbes did not believe that rules or virtues were incentive enough for ethical behavior if they were not accompanied by the state’s ability to visit violence upon the offender. Hobbes’s interest in the physical sciences likely influenced his philosophy that positive control was necessary to avoid the state of anarchy.

John Locke, who came about in a less turbulent Britain roughly a century later, believed in a state of nature that he referred to as “conjugal society.” In this society, (male) heads of household had a say over their families, but not over any other households. In this state of nature, man follows the Law of Nature, wherein God has commanded that we not transgress another man’s “life, health, liberty, or possessions.”¹⁶ The social contract is formed to preserve these rights. When these heads of household came together, they agreed to give up their individual right to punish transgressors, and entered into “one body politic under one government,” in which violators would be punished by the state.¹⁷ While Hobbes provided the initial Enlightenment take on the social contract, Locke provided a less dim and cynical view of the world. Thomas Jefferson liked Locke’s ideas so much that, along with Sir Francis Bacon and Sir Isaac Newton, he declared Locke a member of his “trinity” and tasked artist John Trumbull to commission a painting of the three together on a single canvas.¹⁸

Locke’s ideas also influenced continental Europe. Living within the milieu of the eighteenth-century French monarchy, Jean-Jacques Rousseau believed that people were better off in a state of nature than in their current political arrangement. He believed that

¹⁵ Thomas Hobbes, *Leviathan* (Project Gutenberg, 2002), <https://www.gutenberg.org/files/3207/3207-h/3207-h.htm>.

¹⁶ John Locke, *Second Treatise of Civil Government* (Project Gutenberg, 2010), www.gutenberg.org/files/7370/7370-h/7370-h.htm.

¹⁷ Locke.

¹⁸ “John Locke (Painting),” The Jefferson Foundation, accessed June 19, 2018, www.monticello.org/site/house-and-gardens/john-locke-painting.

“the force and liberty of each man are the chief instruments of his self-preservation” and that by each submitting to the “general will,” they will understand their duties and will know what society considers just.¹⁹ Rousseau’s ideas were instrumental in sparking the French Revolution, which exposed the jeopardy inherent in ceding the rights of the minority to the will of the majority. Nearly a century later, John Stuart Mill would reference Alexis de Tocqueville’s phrase “the tyranny of the majority,” which Mill counted as “among the evils against which society must be on its guard.”²⁰ Alexander Hamilton presaged this in Federalist No. 1, two decades before the Revolution in France, in which he warned of the danger inherent in forms of government where leaders are allowed to don a “specious mask of zeal for the rights of the people,” hiding their true despotism.²¹

In eighteenth-century Germany, Immanuel Kant was instrumental in making the connection between moral and political philosophy. Kant described his “principle of internal freedom” as being “master of oneself in a given case ... and to have command over oneself ... that is to subdue his emotions and to govern his passions.”²² A proponent of rationalism, Kant argued that reason “should have full control over all subjective emotions.”²³ He believed that cognition, or knowing something, was a combination of the concrete inputs of the senses (*concreta*) and the abstract mental process of understanding (*abstracta*). *Abstracta* is a metaphysical concept encompassing all of the things we have terms to describe. *Concreta* are the things that actually exist. Kant also distinguished between “absolute goods,” for which the “maxims necessarily coincide with the laws of autonomy,” and “obligations,” for which one must act in a way inconsistent with their

¹⁹ Jean-Jacques Rousseau, *The Social Contract & Discourses*, trans. George Douglas Howard Cole (Project Gutenberg, 2014), Book I, Chapter 6, <http://www.gutenberg.org/files/46333/46333-h/46333-h.htm>.

²⁰ John Stuart Mill and John Gray, *On Liberty and Other Essays* (Oxford: Oxford University Press, 1998), 7.

²¹ THE FEDERALIST NO. 1, at para. 3 (Alexander Hamilton) (Yale Law School ed., 2008), http://avalon.law.yale.edu/18th_century/fed01.asp.

²² Immanuel Kant, *The Metaphysical Elements of Ethics* (Project Gutenberg, 2004), <http://www.gutenberg.org/cache/epub/5684/pg5684-images.html>.

²³ Immanuel Kant, Allen W. Wood, and J. B. Schneewind, *Groundwork for the Metaphysics of Morals* (New Haven, CT: Yale University Press, 2002), 37.

preferences out of moral necessity.²⁴ His “categorical imperative” invoked a sense of individual responsibility, so as not to be “tempted to the violation of duty.”²⁵ This duty binds the individual to the society at large.

Mill, for his part, rejected any classification of the interests of society, asserting that representative government is a perpetual dialectic between order, by which he meant “the cessation of private violence,” and progress, by which he meant improvement or invention.²⁶ Order is ensured by citizens who exhibit “industry, integrity, justice, and prudence,” while progress is ensured by “mental activity, enterprise, and courage.”²⁷ Mill also introduces a principle that is relevant to the social contract, which states, “that is not unjust which is done with the consent of the person who is supposed to be hurt by it.”²⁸ If an individual puts him or herself in a risky situation and is harmed, it is just. Jeremy Bentham, a fellow utilitarian upon whose work a significant portion of Mill’s philosophy is constructed, argued that the law infringes liberties in proportion to the obligations it places on an individual.²⁹ Bentham proposed the Greatest Happiness Principle, which seeks the “greatest happiness of the greatest number.”³⁰ This subset of consequentialism has come to be known as utilitarianism, which is chiefly concerned with the effects (ends) of an action in order to judge its morality. Mill expands on Bentham’s theory by explaining that it “holds that actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness.”³¹ In other words, the goodness of the results—or consequences—determines how “right” the means to get there were. Mill also argues that Kant’s theory “fails, almost grotesquely, to show that there would be any

²⁴ Kant, *Metaphysics of Morals*.

²⁵ Kant.

²⁶ Mill and Gray, *On Liberty*, 219.

²⁷ Mill, 220

²⁸ John Stuart Mill and John Gray, *On Liberty and Other Essays* (Oxford: Oxford University Press, 1998), 116.

²⁹ Jeremy Bentham, *The Works of Jeremy Bentham*, vol. 1 (Edinburgh: William Tait, 1843), <http://oll.libertyfund.org/titles/bentham-the-works-of-jeremy-bentham-vol-1>.

³⁰ James E. Crimmins, “Jeremy Bentham,” *Stanford Encyclopedia of Philosophy*, March 17, 2015, <https://plato.stanford.edu/entries/bentham/>.

³¹ Mill and Gray, *On Liberty*, 137.

contradiction, any logical (not to say physical) impossibility, in the adoption by all rational beings of the most outrageously immoral rules of conduct.”³² This is an argument fundamentally based in the economic theory of expected value. Bentham describes an inconvenient and indeterminate community of goods “in which the whole belongs to every one”—a system that free-riders or opportunists can exploit.³³ The grotesque comparison he uses depicts what he calls “that kind of monster which is sometimes found to exist.”³⁴ To Mills, the idea of entering into a social contract was antithetical to his principle of utility, even calling the concept “oblique and winding.”³⁵

During the late nineteenth century, an aberrant strain began to take hold, which came to be known as the philosophy of nihilism. Friedrich Nietzsche—upending the entire development of Western philosophy from the very start—asserted that Socrates killed the heroic age of Ancient Greece by advocating for contemplation and empirical observation over emotion. Nietzsche believed that the driving forces behind human behavior were the dueling wills of the arts: Apollo and Dionysus. In this sense, the “will” should not be understood, as it is with Aquinas, as divinely inspired, but rather as something more primitive. Nietzsche’s concept did not describe cognition or even some spiritual godhead, but something akin to an appeal to the lizard brain.³⁶ Apollo represented a world of dreams, or the individual ideal, while Dionysus represented a subjective sort of drunkenness, vanishing “into complete self-forgetfulness,” as part of a “mysterious Primordial Unity.”³⁷ Nietzsche saw these simply as energies over which a human being had no control. A few decades later, he expanded on this concept by describing the difference between master and slave morality. In his description, the master morality is noble and does things out of fear of consequences, while slave morality is humble and acts out of some virtue-based or

³² Mill and Gray, 134.

³³ Bentham, *The Works of Jeremy Bentham*.

³⁴ Bentham.

³⁵ Bentham.

³⁶ The lizard brain is a semi-scientific term for the part of the brain that governs instinct or impulse.

³⁷ Friedrich Nietzsche, *The Birth of Tragedy* (Mineola, NY: Dover Publications, 1995), 4.

deontological code, calling Kant's categorical imperative "enigmatic."³⁸ While his ethics could be considered essentially ends-based, Nietzsche's eschewing of rationality and empiricism set him apart. It is his rejection of politics, and his appeal to individual and collective will, that make him simultaneously an aberration in the development of the social contract and also important in understanding the role of the individual in it.

In the 1970s, two American philosophers matured the theory behind the social contract in the American context. John Rawls and Robert Nozick, both contemporaries of one another as well as professional and social acquaintances, wrote from a period of relative peace following two centuries of the American Experiment's wars, crises, and political upheavals. Rawls expanded on Kant's concept of moral law with the "original position." This theory uses a hypothetical case where free and equal people enter into a society through a social contract for which "the principles of justice are chosen behind a veil of ignorance."³⁹ Kant and Rawls agree that a social contract is necessary to form the basis of a just and ethical society.

Nozick was a critic of utilitarianism, and he claimed that the concepts of total utility and average utility were both non-egalitarian and exploitative. The exploiters of a utilitarian system are affectionately called "utility monsters," who would devour us all in order to increase total utility. The peril inherent in total utility, he notes, is that we can only continue to add people up until a tipping point, at which "the loss in utility their presence in the world causes others."⁴⁰ The primary issue with average utility, Nozick notes, is that it "allows a person to kill everyone else if that would make him ecstatic, and so happier than average."⁴¹ To simplify Nozick's point, it may be helpful to think about it in the context of Bentham's Greatest Happiness. If we know that resources are finite, even under conditions of uncertainty, we can mathematically bound what is meant by "greatest"—the

³⁸ Friedrich Nietzsche, *On the Genealogy of Morality* (New York: Cambridge University Press, 2007), 5.

³⁹ John Rawls, *A Theory of Justice* (Cambridge, MA: The Belknap Press of Harvard University Press, 1999), 11.

⁴⁰ Robert Nozick, *Anarchy, State, and Utopia* (Cambridge, MA: Harvard University Press, 1974), 41.

⁴¹ Nozick, 41.

actual total and the total to be averaged being the same. On Nozick's criticism of total utility, the division of resources would decrease the expected utility for each individual. On his criticism of average utility, any increase to the average means either an increase in inequality, or that the total number of recipients is being nefariously winnowed.

Rawls does not specifically criticize utilitarianism, but he exposes "the priority problem."⁴² That problem is rooted in the same conflict noted by Nozick, that the principles of utility—maximizing total happiness and "evening out distortion of advantages"—do not have any priority rule to mediate conflicts that arise between the two.⁴³ The problem of priorities, according to Rawls, presents itself when we attempt to intuitively weigh competing values on arising issues. Rawls is clear that intuition is present in both teleological and deontological theories of ethics. One solution he offers is "lexical ordering," or placing a higher priority on certain values, giving them an absolute weight in relation to one another.⁴⁴ Rawls admits that it is probably not possible to eliminate all intuitive judgments, but society can reduce the number of intuitive decisions that need to be made by applying considered judgment in an environment in which "conditions are favorable to the exercise of justice."⁴⁵ Rawls describes the resulting condition as the "veil of ignorance" present in the "original position." In that condition, epistemologically, expected value remains probabilistic and not deterministic in nature. In this way, while a person may exploit the system on a case-by-case basis, the social contract is founded on principles of justice that are intended to prevent chronic exploitation. Rawls's two principles of justice are to (1) "define and secure the equal basic liberties," and (2) "specify and establish social and economic inequalities."⁴⁶

Through this lens, the framers of the U.S. Constitution seem to have captured the essence of Rawls's theory of justice. While the Preamble focuses on "[securing] the Blessings of Liberty," the rest of the document, especially the Bill of Rights, can be seen

⁴² Rawls, *A Theory of Justice*, 36.

⁴³ Rawls, 32.

⁴⁴ Rawls, 36.

⁴⁵ Rawls, 42.

⁴⁶ Rawls, 53.

as recognizing that social and economic inequalities exist while providing avenues to distribute them so that they are advantageous to everyone.⁴⁷ The debates over the Constitution reflect the “perspective of eternity” recommended by Rawls to “regard the human situation not only from all social but also from all temporal points of view.”⁴⁸ Since the Revolutionary War period, American philosophers, politicians, government officials, lawyers, the media, and private citizens have all used the language of the social contract to drive changes “in Order to form a more perfect Union.” Rawls’s framing of the social contract, and his comparisons of ethical approaches, thus seem best suited as the analytical framework for researching the ethics of individual and institutional approaches to disaster relief in the United States.

B. PROFESSIONAL CODES OF CONDUCT

Disaster relief organizations typically have codes of ethics or professional conduct. Some of these are values based in that they include statements of core values. Most, however, are compliance based, which means they set out specific rules. If an individual breaks these rules, there are specific sanctions that accompany the level of infraction, up to and including termination, civil action, or criminal charges. Some examples of these codes of conduct include those from the following organizations or associations.

- *Publication 1* from the Federal Emergency Management Agency (FEMA) outlines the agency’s ethos, a series of core values, and a series of guiding principles “that provide overarching direction to FEMA employees for the performance of their duties.”⁴⁹ FEMA also requires all of its employees to take annual ethics training.⁵⁰ This training is primarily focused on

⁴⁷ U.S. Const. preamble.

⁴⁸ Rawls, 514.

⁴⁹ FEMA, *Federal Emergency Management Agency Publication 1* (Washington, DC: Department of Homeland Security, 2016), <https://www.fema.gov/media-library/assets/documents/25272>.

⁵⁰ Federal Emergency Management Agency, “IS-33.17: FEMA Initial Ethics Orientation 2017,” <https://training.fema.gov/is/courseoverview.aspx?code=IS-33.17>.

compliance with regulations promulgated by the Office of Government Ethics.

- The International Association of Emergency Managers (IAEM), a nongovernmental organization focused on the professionalization of the discipline of emergency management, also has a code of ethics.⁵¹
- The International Federation of Red Cross and Red Crescent Societies has a values-based code of conduct; the societies allow any other humanitarian relief organization to publicly register as a signatory for the code.⁵²
- The Sphere Project, which is an initiative of various nongovernmental organizations involved in disaster relief, promulgates the “Humanitarian Charter and Minimum Standards in Humanitarian Response,” which “provides the ethical and legal backdrop” and “minimum standards” for disaster response.⁵³
- Oregon’s Emergency Management Agency reproduces a monograph entitled “Principles of Emergency Management,” which outlines eight principles developed by a FEMA-led working group.⁵⁴ These principles provide broad guidance for the development of emergency management doctrine but do not address specific issues of resource allocation. While the document identifies IAEM’s code of ethics as the professional

⁵¹ International Association of Emergency Managers (IAEM), “IAEM Code of Ethics and Professional Conduct,” January 31, 2011, accessed October 2, 2017, <http://www.iaem.com/page.cfm?p=about/code-of-ethics>.

⁵² International Federation of Red Cross and Red Crescent Societies, “Code of Conduct,” accessed October 15, 2017, <http://media.ifrc.org/ifrc/who-we-are/the-movement/code-of-conduct/>.

⁵³ The Sphere Project, “Humanitarian Charter and Minimum Standards in Humanitarian Response,” accessed October 15, 2017, <http://www.spherehandbook.org/en/the-humanitarian-charter/>.

⁵⁴ The eight principles outlined in the document are Comprehensive, Progressive, Risk-driven, Integrated, Collaborative, Coordinated, Flexible, and Professional.

standard, its authors concede that “no single code of ethics has yet been agreed upon for the profession.”⁵⁵

- Washington’s Emergency Management Division outlines a series of organizational values on its website, including “hold[ing] ourselves accountable to the highest personal, professional and ethical standards.”⁵⁶

Researchers have noted that organizations with compliance-based codes “rely heavily upon attorneys or personnel specialists.”⁵⁷ It has also been shown that this low-road approach is especially useful for providing an organization with immunity in the event of an ethics breach by one of its employees. However, it has also been found to “[reduce] the incentive for organizations to encourage their employees to address high-road ethics issues.”⁵⁸ While an agency’s ethos and core values can address broad virtues expected of employees that would qualify as “high road,” they are often too abstract to be practical.

C. GOVERNANCE

Moral philosophy is closely linked to the social sciences; while ethical theories can create analytical frameworks, relevant literature on governance can provide a basis for its application. In order to understand the applicability of ethics to the United States and the federal agencies that comprise its government, it is also important to link them to the nation’s founding documents. The United States Declaration of Independence asserts that “all men are created equal ... are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness.”⁵⁹ The Constitution of the

⁵⁵ Wayne Blanchard, *Principles of Emergency Management*, FEMA Emergency Management Institute, September 11, 2007. http://www.oregonemergency.com/media/principles_of_em.pdf.

⁵⁶ Washington State Military Department, “Emergency Management Division | Washington State Military Department,” accessed October 15, 2017, <https://mil.wa.gov/emergency-management-division>.

⁵⁷ Robert Roberts, “The Rise of Compliance-Based Ethics Management: Implications for Organizational Ethics,” *Public Integrity* 11, no. 3 (Summer 2009), <http://dx.doi.org/10.2753/PIN1099-9922110305>, 263.

⁵⁸ Robert Roberts, “The Rise of Compliance-Based Ethics Management: Implications for Organizational Ethics,” *Public Integrity* 11, no. 3 (Summer 2009), <http://dx.doi.org/10.2753/PIN1099-9922110305>, 269.

⁵⁹ THE DECLARATION OF INDEPENDENCE para. 2 (U.S. 1776).

United States introduces its preamble with “We the People.” Alexander Hamilton, the framer most invested in establishing a federalist system of government, noted in Federalist Paper No. 83, “Here, in strictness, the people surrender nothing; and as they retain everything they have no need of particular reservations.”⁶⁰ This social contract is critical to understanding that American citizens, through elections and civic engagement, are chiefly responsible for the development and elucidation of any ethical protocols implemented by government.

In the middle of the nineteenth century, British journalist Walter Bagehot, who inherited the helm of *The Economist* magazine through marriage, contributed substantially to our understanding of the role of government instrumentalities. Max Weber, a German sociologist who lived in pre-World War I Germany and who was largely influenced by Immanuel Kant, provides us with the “rational-legal model” for understanding government legitimacy. In Weber’s interpretation, governments are legitimate insofar as society provides them with the authority to exercise specific powers. While this echoes social contractarian philosophy, the theory goes further by providing a rational basis for government instrumentalities, to include the bureaucracy.⁶¹ Jürgen Habermas, whose ideas were formed in post-World War II Germany, advocated for “a relative legitimacy,” defined through discourse and social interaction. In Habermas’s view, government legitimacy is not necessarily empirically rational in the context of the social contract, but is socially constructed.⁶²

Several scholars across various disciplines have sought to explain the government’s role in disaster response. David Moss, a contemporary professor of business administration, traces the evolution of federal disaster response, noting that it is a

⁶⁰ THE FEDERALIST NO. 23 (Alexander Hamilton).

⁶¹ Sung Ho Kim, “Max Weber,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Winter 2017), <https://plato.stanford.edu/entries/weber/>.

⁶² James Bohman and William Rehg, “Jürgen Habermas,” in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta (Fall 2017), <https://plato.stanford.edu/archives/fall2017/entries/habermas/>.

“patchwork of disparate programs and commitments.”⁶³ He also sums up the guiding principles of the federal government’s involvement in activities like disaster response (such as product liability and mortgage insurance) as “creating a secure environment for all citizens.”⁶⁴ Charles Perrow, a sociologist who has studied disaster vulnerability, makes an argument for tighter control over risk management, including decentralizing high-risk populations, corporate power, and critical infrastructure. Perrow also highlights Moss’s book, noting that “There was no official mandate for the Federal government to respond to disasters through most of our history as a nation.”⁶⁵

D. DISASTER SOCIOLOGY

The legal and philosophical framework upon which America’s domestic disaster response capability has been built has key political and social elements. In addition to understanding the decisions of political leadership, the governments they oversee, and the responders that (typically) work for those governments, if the purpose of governmental disaster response is to alleviate the suffering of the population, then it becomes important to understand the sociology of those affected by disaster. The social construction of disaster complicates any rigid ethical approach or economic assessment.

In the middle of the twentieth century in the United States, research funded by the National Academies of Sciences—led by Charles E. Fritz and John H. Mathewson—observed the “problem of social control” in disasters.⁶⁶ The collective body of work by researchers at the University of Delaware’s Disaster Research Center builds upon this legacy of social research, and provides what is, largely, a sociological basis for contextualizing modern disaster response. Rather than looking at these issues simply

⁶³ David A. Moss, “Courting Disaster? The Transformation of Federal Disaster Policy since 1803,” in *The Financing of Catastrophe Risk*, ed. Kenneth A. Froot (Chicago: University of Chicago Press, 1999), 321; David A. Moss, *When All Else Fails: Government as the Ultimate Risk Manager*, 1st ed. (Cambridge, MA: Harvard University Press, 2004).

⁶⁴ Moss, *When All Else Fails*, 321.

⁶⁵ Charles Perrow, *The Next Catastrophe: Reducing Our Vulnerabilities to Natural, Industrial, and Terrorist Disasters* (Princeton, NJ: Princeton University Press, 2011), 44.

⁶⁶ Charles E. Fritz and John H. Mathewson, *Convergence Behavior in Disasters: A Problem in Social Control* (Washington, DC: National Academy of Sciences–National Research Council, 1957), 5–6.

through ethical or practical lenses, these researchers take a constructivist approach to understanding disaster relief in terms of individual and group social relations. Chief among these is the Center's founder, Enrico Quarantelli, whose research establishes some common terms of reference for disaster management. Quarantelli and others have established that catastrophes carry with them significant qualitative differences over and above more common disasters. These differences all contribute to the fact that, in catastrophes, "the political arena becomes even more important ... [stemming from the surfacing of] racial, class and ethnic differences that are papered over during routine times ... [and] organizational weaknesses of responding organizations come even more to the surface."⁶⁷ Tricia Wachtendorf observes that this politicization leads to "heightened discourse ... with regard to who is at fault, as different levels of government blame one another for inadequacies in supply distribution."⁶⁸ Wachtendorf et al. also include as a factor in catastrophe the "mass and extended out-migration of people," which geographically expands the effective disaster area.⁶⁹ Gary R. Webb et al. reinforce the idea that individuals have agency, whether they are state or local government officials or survivors of a disaster. Additionally, the authors note that these roles evolve in uncertain disaster environments, where bureaucracy has limitations.⁷⁰

Various other modern sociologists focus on the problems of existing social inequalities and their impacts before and after disasters. Naomi Zack, a philosophy professor at the University of Oregon, authored a book entitled *Ethics for Disaster*, which

⁶⁷ Enrico L. Quarantelli, "Catastrophes Are Different from Disasters: Some Implications for Crisis Planning and Managing Drawn from Katrina," *Understanding Katrina: Perspectives from the Social Sciences* (Social Science Research Council), June 11, 2006, <http://understandingkatrina.ssrc.org/Quarantelli/>.

⁶⁸ Tricia Wachtendorf, "Session 7a: Catastrophe Readiness and Response Course," FEMA, 2010, accessed June 20, 2018, <https://training.fema.gov/hiedu/docs/crr/cat%20-%20session%207a%20-%20part%201%20-%20logistics%20power%20point.ppt>.

⁶⁹ Tricia Wachtendorf et al. "Catastrophe Characteristics and their Impact on Critical Supply Chains: Problematising Material Convergence and Management Following Hurricane Katrina," Preliminary Paper #365 (preliminary paper, University of Delaware Disaster Research Center, 2010), 32, <http://udspace.udel.edu/handle/19716/4991>.

⁷⁰ Gary R. Webb et al., "Role Improvising under Conditions of Uncertainty: A Classification of Types," Preliminary Paper #289 (preliminary paper, University of Delaware Disaster Research Center, 1999), <http://udspace.udel.edu/handle/19716/666>.

takes a social justice approach to the issue, focused “on how nonwhite, poor, elderly, and disabled disaster victims suffer the most.”⁷¹ Elaine Enarson and her colleagues have studied the inequalities created by disasters, as well as the response to and recovery from them. One of their critical findings is that “disaster risk is socially distributed in ways that reflect the social divisions that already exist in society.”⁷² This will become important when considering choices in a crisis environment. Sociologist Shirley Laska and her colleagues note that, following a catastrophic disaster, “conflict arises between groups or institutions and even individuals pursuing these different goals because they cannot be given equal attention in time, resources, and values.”⁷³ This is linked to Enarson’s work in that it recognizes the social aspects of disaster response.

Another social aspect of disaster relief is leadership, including leadership style. Arjen Boin and Paul ‘t Hart disagree with the notion that leadership in a disaster rests simply on decisive leaders making tough choices and providing clear intent on how to execute them. In reality, they assert, disaster response by governments is “shaped to a great extent by a steady stream of ad hoc responses to ‘what do we do now?’ questions that emerge during a crisis.”⁷⁴ In order to foster this culture, they recommend the decentralization of decision-making, “intense cooperation and improvisation,” and avoidance of “upscaling” (having higher authorities step in until absolutely necessary).⁷⁵ When it becomes necessary to involve higher levels of leadership, they advocate for being aware of when a leader is using a “non-decision” or “strategic evasion” to escape individual responsibility.⁷⁶

⁷¹ Naomi Zack, *Ethics for Disaster* (Lanham, MD: Rowman & Littlefield, 2009), back cover.

⁷² Elaine Enarson, Alice Fothergill, and Lori Peek, “Gender and Disaster: Foundations and Directions,” in *Handbook of Disaster Research*, ed. Havidán Rodríguez, E. L. Quarantelli, and Russell Rowe Dynes (New York: Springer, 2007), 130.

⁷³ Robert William Kates et al., “Reconstruction of New Orleans after Hurricane Katrina: A Research Perspective,” *Proceedings of the National Academy of Sciences* 103, no. 40 (2006): 14656.

⁷⁴ Arjen Boin and Paul ‘t Hart, “Aligning Executive Action in Times of Adversity: The Politics of Crisis Co-ordination,” in *Executive Politics in Times of Crisis*, ed. Martin Lodge and Kai Wegrich, 179–196 (London: Palgrave Macmillan, 2012), 180, doi:10.1057/9781137010261_10.

⁷⁵ Arjen Boin et al., *The Politics of Crisis Management: Public Leadership under Pressure* (New York: Cambridge University Press, 2005), 51–55.

⁷⁶ Boin et al., 52.

E. DISASTER RESPONSE AS RISK MANAGEMENT

Moss outlines “four basic ways to manage risk: prevention, risk shifting, risk spreading, and loss control.”⁷⁷ The U.S. federal government defines disaster response as “those capabilities necessary to save lives, protect property and the environment, and meet basic human needs after an incident has occurred.”⁷⁸ Therefore, disaster response can be categorized within Moss’s definition of loss control. He explains the conditions for loss control as, “Bad things do happen, sometimes in spite of all that we do to prevent them, at other times precisely because we have not done enough.”⁷⁹ Within FEMA’s legislative mandate for disaster response—the Robert T. Stafford Disaster Relief and Assistance Act—the theory underpinning its disaster response authority is described as the imperative to “lessen or avert the threat of a catastrophe.”⁸⁰ The International Federation of Red Cross and Red Crescent Societies further explains that “the primary aims of disaster response are rescue from immediate danger and stabilization of the physical and emotional condition of survivors.”⁸¹ The need for resources to manage risk through loss control can be linked to the severity of an incident, which drives the requirements for stabilization.

FEMA provides risk assessment guidance to emergency management stakeholders through *Threat and Hazard Identification and Risk Assessment Guide: Comprehensive Preparedness Guide 201* (referred to as THIRA or CPG 201), and provides disaster response resource management guidance through the National Incident Management System (NIMS) publication. THIRA outlines a four-step process, which includes: (1) identifying a list of threats and hazards of primary concern to a community, (2) showing how they affect the community, (3) establishing capability targets, and (4) estimating the

⁷⁷ Tom Baker and David Moss, “Government as Risk Manager,” in *New Perspectives on Regulation*, ed. David Moss and John Cisternino, 87–109 (Cambridge, MA: Tobin Project, 2009), 88.

⁷⁸ Baker and Moss, 88

⁷⁹ Baker and Moss, 91.

⁸⁰ Robert T. Stafford Disaster Relief and Assistance Act, Pub. L. No. 100-707, as amended, 42 U.S.C. 5121 § 502 (1988).

⁸¹ International Federation of Red Cross and Red Crescent Societies, “Responding to Disasters,” accessed January 23, 2017, <http://www.ifrc.org/en/what-we-do/disaster-management/responding/>.

resources required to manage the assessed risk.⁸² NIMS identifies a seven-step process for resource management: (1) identify requirements, (2) order and acquire, (3) mobilize, (4) track and report, (5) recover/demobilize, (6) reimburse, and (7) inventory.⁸³

F. PRINCIPLES OF ALLOCATION AND SCARCITY

In economics, the idea of a resource-scarce environment is well understood. Adam Smith, a Scot who published his seminal *Wealth of Nations* in London in 1776, argued that “abundance or scantiness” of supply depends heavily on “the skill, dexterity, and judgment with which [a nation’s] labour is generally applied,” and to a lesser extent on the “proportion ... employed in useful labour, and that of those who are not so employed.”⁸⁴ In 1867, Karl Marx, who later wrote *The Communist Manifesto* with Friedrich Engels, argued that Smith’s perfectly competitive market exploited labor in order to accumulate capital. In *Das Kapital*, Marx observes, with regard to the plight of the working class in Victorian Britain, “the pangs of hunger of the most industrious layers of the working class,” and their connection to the “extravagant consumption” of the wealthy.⁸⁵ While Smith, Marx, and Engels focused largely on labor (the means of production), British economist Lord Lionel Robbins simplified the issue in the 1930s, writing simply that “Scarcity of means to satisfy given ends is an almost ubiquitous condition of human behaviour.”⁸⁶

If the needs are ubiquitous, the judicious allocation of scarce resources is required. While the utilitarian approach is one of the most debated approaches to ethical resource allocation in the literature, since it is about maximizing broad social benefit, it carries with it severe ethical limitations. There are other approaches that attempt to inject additional

⁸² FEMA, *Threat and Hazard Identification and Risk Assessment Guide: Comprehensive Preparedness Guide (CPG) 201*, 2nd ed. (Washington, DC: Department of Homeland Security, 2013).

⁸³ Department of Homeland Security, *National Incident Management System (NIMS)* (Washington, DC: Department of Homeland Security, 2008).

⁸⁴ Adam Smith, *Wealth of Nations* (Oxford: Oxford University Press, 1976), 10.

⁸⁵ Karl Marx, *Capital: A Critique of Political Economy, Volume 1: The Process of Capitalist Production*, trans. from the 3rd German edition by Samuel Moore and Edward Aveling, ed. Friedrich Engels, revised and amplified according to the 4th German ed. by Ernest Untermann (Chicago: Charles H. Kerr and Co., 1909), 458.

⁸⁶ Lionel Charles Robbins, *An Essay on the Nature and Significance of Economic Science* (London: MacMillan, 1935).

nuance into the question of “What constitutes the greatest good?” The public health and medical disciplines have a wide body of research, primarily rooted in the Hippocratic Oath, that outline various principled approaches to ethical resource allocation. They include three broad categories: (1) fair chances, (2) utilitarianism, and (3) prioritarianism.

Fair chances contends that resources should be provided to everybody who needs them until they run out.⁸⁷ In other words, the purely utilitarian approach of doing the greatest good for the greatest number of people (in the medical example, one pill per patient) can be overridden if a patient needs two pills.⁸⁸ This can follow a first-come, first-served approach, or random selection. Random selection was popularized in a 1948 clinical trial by Sir Austin Bradford Hill, who designed a study for curing patients of pulmonary tuberculosis. Hill argued that double-blind studies, which researchers and subjects both approach from a position of ignorance, are inherently unethical. Hill found that if the goal is to save a life, it is best if the doctor has a clear understanding of the situation, or the doctor might cause more harm.⁸⁹ By randomizing an allocative decision, whether through a lottery or the use of first-come, first-served policies, we can remove or reduce biases.

Utilitarian approaches are focused on positive outcomes, and are consistent with Bentham’s greatest good. In economic terms, these approaches are focused on maximizing expected utility, or calculating how to achieve the greatest good through probabilistic assessment. Utilitarian approaches differ on exactly what “greatest good” actually means. Two of the most widely proposed approaches to resource allocation in public health, based in expected utility theory, are QALYs and DALYs:

- Maximize quality-adjusted life years (QALYs), which are “estimates of person-years lived at particular levels of health.... Quality is typically

⁸⁷ Michael L. Volk et al., “Beyond Utilitarianism: A Method for Analyzing Competing Ethical Principles in a Decision Analysis of Liver Transplantation,” *Medical Decision Making* 28, no. 5 (2008): 763–772.

⁸⁸ D. Brock and Daniel Wikler, “Ethical Issues in Resource Allocation, Research, and New Product Development,” in *Disease Control Priorities in Developing Countries*, 2nd ed., ed. Dean T. Jamison et al., (New York: Oxford University Press, 2006), 259–60.

⁸⁹ Austin Bradford Hill, “Medical Ethics and Controlled Trials,” *British Medical Journal* 1, no. 5337 (1963): 1043.

measured on a scale of zero (death) to 1.0 (perfect health) by assigning various weights to potential health states.”⁹⁰

- Maximize disability-adjusted life years (DALYs), which was introduced in 1994 by Christopher Murray, a professor of international health economics, as a way of measuring the “burden of disease” and calculates “time lived with disabilities” caused by some health problem.⁹¹

DALYs and QALYs, however, do not give equal treatment to people, but rather to units of measure. Another utilitarian approach, “social worth”—or the perceived value an individual has to society—is a well-known theory, and one that is persistent in popular culture. It is best expressed by the title character in the satirical film *Dr. Strangelove*, who advocates using a computer program to determine who should survive a thermonuclear war. That formula, he notes, should look at specific individual factors, including youth, health, intelligence, and “a cross-section of necessary skills.”⁹² In most serious research, this approach has been described as “value-laden,” “arbitrary,” and “unacceptable.”⁹³

The prioritarian approach still seeks the greatest good, but focuses specifically on helping those who are worse off. An example of the prioritarian approach is a concept known as “sickest first,” also called the “rule of rescue.” This allocative approach asserts that “Our moral response to the imminence of death demands that we rescue the doomed.”⁹⁴ This is in direct conflict with the utilitarian principle espoused by Bentham and Mill, given that the likely need for additional time and resources would reduce expected utility.

⁹⁰ Centers for Disease Control and Prevention, “Measuring Healthy Days: Population Assessment of Health-Related Quality of Life” (report, Centers for Disease Control and Prevention, 2000), 4–6.

⁹¹ Christopher J. Murray, “Quantifying the Burden of Disease: The Technical Basis for Disability-Adjusted Life Years,” *Bulletin of the World Health Organization* 72, no. 3 (1994): 429.

⁹² Peter Sellers (as Dr. Strangelove) in Stanley Kubrick, Peter George, and Terry Southern, *Dr. Strangelove; Or, How I Learned to Stop Worrying and Love the Bomb* (Culver City, CA: Sony Pictures Home Entertainment, 1964).

⁹³ George J. Annas, “The Prostitute, the Playboy, and the Poet: Rationing Schemes for Organ Transplantation,” *American Journal of Public Health* 75, no. 2 (1985): 187–189.

⁹⁴ Albert R. Jonsen, “Bentham in a Box: Technology Assessment and Health Care Allocation,” *Law, Medicine and Health Care* 14, no. 3–4 (1986): 172–174.

III. THE PHILOSOPHICAL BASIS FOR DISASTER RESPONSE

While disaster response is an inherently action-oriented profession, an understanding of the philosophical basis for domestic disaster relief is critical to setting parameters for any action. This chapter provides an overview of the *abstracta* in relation to disaster relief in the United States. This includes an overview not only of moral philosophy (ethics), but also elements of the social contract, the implications of America's federalist system, religion, the bureaucracy, and media and the public sphere.

A. DISASTERS AND GOVERNMENT LEGITIMACY

Enlightenment philosophers, the framers of American democracy, and political theorists since have all understood, at some level, the uncertainty of the American experiment. In his essay "The Rights of Man," Thomas Paine wrote that "Government is nothing more than a national association; and the object of this association is the good of all, as well individually as collectively."⁹⁵ This is consistent with Joseph Schumpeter's definition of democracy as an instrument for "making the people itself decide issues through the election of individuals who are to assemble in order to carry out its will."⁹⁶ To put a finer point on the importance of elected officials' accountability to the people, Schmitter and Karl expanded on Schumpeter's well-worn definition of democracy by emphasizing the citizen's role in holding public officials accountable, "acting indirectly through the competition and cooperation of their elected representatives."⁹⁷ In 1787, framing the discussion around the U.S. Constitution, Thomas Jefferson wondered rhetorically, "What country can preserve it's [sic] liberties if their rulers are not warned from time to time that their people preserve the spirit of resistance?"⁹⁸ While it is not often

⁹⁵ Thomas Paine, "The Rights of Man," in *Common Sense and Other Writings*, ed. Gordon S. Wood (New York: Modern Library, 2003), 170.

⁹⁶ Joseph A. Schumpeter, *Capitalism, Socialism and Democracy* (New York: Harper Brothers, 1942), 250.

⁹⁷ Philippe C. Schmitter and Terry Lynn Karl, "What Democracy Is... and Is Not," *Journal of Democracy* 2, no. 3 (Summer 1991): 76, <https://doi.org/10.1353/jod.1991.0033>.

⁹⁸ Thomas Jefferson, to William Stephens Smith (Paris, November 13, 1787), Thomas Jefferson Foundation, accessed June 27, 2018, <http://tjrs.monticello.org/letter/100>.

considered in the modern context, the government's assessed effectiveness in response to disaster could serve as an existential threat to its legitimacy.

Max Weber separated the concepts of legitimacy and government performance, but understood that they were inextricably linked. While Weber merely sought to describe the ways in which governments can gain, maintain, and lose legitimacy, John Rawls and others have attempted to describe justifications for that legitimacy, including the concept of justice.⁹⁹ Rawls was chiefly concerned with the society and the citizen. Some have noted that Rawls believed that the former should be a fair system, and the latter should be free and equal.¹⁰⁰ In a practical sense, how should citizens assess the effectiveness or legitimacy of their local, state, or federal governments following disaster?

Zahidul Arefin Choudhury found an inverse correlation between natural disasters and government legitimacy. In other words, the greater the number of disasters and the greater the devastation that a country experiences, the lower its government's legitimacy.¹⁰¹ Choudhury's research centered on metrics to assess governmental disaster response performance, and his key finding across two decades of relevant research was that "Stability breaks down when the system fails to perform effectively and satisfactorily over a long period of time."¹⁰² In other words, one botched response does not sink a government; however, when the citizens begin to recognize a discernible pattern of failed performance, the government's legitimacy is at risk.

In a democracy, decisions can be legitimate without being just, according to Rawls. Justice means that the government is equitable and working for everybody's benefit, while legitimacy is the ability to justify decisions or actions to everybody. In Rawls' theoretical

⁹⁹ Fabienne Peter, "Political Legitimacy," in *Stanford Encyclopedia of Philosophy*, April 24, 2017, <https://plato.stanford.edu/entries/legitimacy/>.

¹⁰⁰ Fabienne Peter, "Rawls' Idea of Public Reason and Democratic Legitimacy," *Journal of International Political Theory* 3, no. 1 (2007): 135, <http://journals.sagepub.com/doi/pdf/10.1177/1743453X0700300110>.

¹⁰¹ Zahidul Arefin Choudhury, "Politics of Natural Disaster: How Governments Maintain Legitimacy in the Wake of Major Disasters, 1990–2010" (PhD thesis, University of Iowa, 2013), <http://ir.uiowa.edu/etd/1566>.

¹⁰² Choudhury, 28.

framework, he introduces the idea of the “veil of ignorance,” wherein the parties in a social contract enter into an agreement without foreknowledge of how it might benefit them, and “are obligated to evaluate principles solely on the basis of general considerations.”¹⁰³ James Sterba has described Rawls’s social contract as “a hypothetical not an historical contract.”¹⁰⁴ In that hypothetical world, Rawls uses the veil to “nullify the effects of specific contingencies which put men at odds and tempt them to exploit social and natural circumstances to their own advantage.”¹⁰⁵ As Berger and Luckman note, “it is impossible for man in isolation to produce a human environment.”¹⁰⁶ In practical terms, human evolution developed simultaneously with socialization and the institutionalization of society. Samuel Freeman expanded on this hypothetical contract by introducing deliberative democracy as the practical decision model.¹⁰⁷ As Freeman notes, “deliberative democracy is a moral requirement of political legitimacy.”¹⁰⁸ According to Gerald Gaus, in the ideal implementation of deliberative democracy all government policies are justifiable, driven by a process through which “each citizen presents what he or she believes is the best public justification.”¹⁰⁹ In the United States, the voting booth is the primary venue through which those public justifications are most fairly judged as justifiable. However, smaller assemblies, such as city council meetings, public hearings, and comment periods for government policies and regulations can all drive consensus on our social contract. Given, then, that the decision is put upon the citizen, what is the appropriate

¹⁰³ Rawls, *A Theory of Justice*, 118.

¹⁰⁴ James P. Sterba, “Toulmin to Rawls,” in *Ethics in the History of Western Philosophy*, eds. Robert J. Cavalier, James Gouinlock, and James P. Sterba (London: MacMillan, 1989), 406.

¹⁰⁵ Rawls, *A Theory of Justice*, 10.

¹⁰⁶ Peter L. Berger and Thomas Luckman, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (New York: First Anchor Books, 1967), 51.

¹⁰⁷ Samuel Freeman, “Deliberative Democracy: A Sympathetic Comment,” *Philosophy & Public Affairs* 29, no. 4 (2000): 379, doi:10.1111/j.1088-4963.2000.00371.x.

¹⁰⁸ Freeman, 379.

¹⁰⁹ Gerald F. Gaus, “Reason, Justification, and Consensus: Why Democracy Can’t Have it All,” in *Deliberative Democracy: Essays on Reason and Politics*, eds. James Bohman and William Rehg (Cambridge, MA: MIT Press, 1997), 234, http://www.sze.hu/~smuk/Nyilvanossag_torvenyek_CEE/Szakirodalom/Deliberat%C3%ADv%20demokr%C3%A1cia/deliberative%20democracy%20book.pdf#page=236.

theory or framework for judging how the government might carry out that decision in practical terms?

One general theory—distributive justice—refers to the actual allocation of outcomes between individuals. Perhaps this is a reasonable way in which the public could begin to assess both government effectiveness and legitimacy? In terms of guarantees for equality, the Fourteenth Amendment to the U.S. Constitution ensures “equal protection of the laws,” though it says nothing about equality of outcomes.¹¹⁰ Tom Tyler, a psychologist who established the foundation for our current understanding of procedural justice, notes that what is more important is whether an individual feels respected or disrespected. Procedural justice is based in equity theory, which argues that you have to look at subjective inputs and outcomes within the context of a relationship.¹¹¹ In other words, what is the sense of fairness in someone’s subjective mind? Tyler’s research has shown that “People are more willing to accept third-party decisions contrary to their self-interest if they feel the decisions are made in ways that involve fair procedures.”¹¹² Tyler lists three factors that contribute to this feeling: the authority figure being seen as neutral, being seen as trustworthy, and recognizing and respecting the other person’s status.

In the United States, our social contract begins with our founding documents. The Declaration of Independence serves as one of the earliest practical applications of Enlightenment philosophy, consistent with the deontological ethics of Kant. It asserts that governments can only exist when they derive “their just powers from the consent of the governed.”¹¹³ The Declaration seeks the foundation of a government that is “most likely to effect [the People’s] Safety and Happiness.” The Constitution, being of, by, and for the people, makes no mention of responsibilities or duties, though *The Federalist Papers* recognized that men are not angels. In establishing a government that still recognized

¹¹⁰ U.S. Const. amend. XIV § 1.

¹¹¹ J. Stacy Adams, “Towards an Understanding of Inequity,” *The Journal of Abnormal and Social Psychology* 67, no. 5 (November 1963): 422–436, <http://dx.doi.org/10.1037/h0040968>.

¹¹² Tom R. Tyler and Heather J. Smith, “Justice, Social Identity, and Group Processes,” in *The Psychology of the Social Self*, eds. Tom R. Tyler, Roderick M. Kramer, and Oliver P. John (New York: Psychology Press, Taylor & Francis Group, 2012), 248.

¹¹³ THE DECLARATION OF INDEPENDENCE para. 2 (U.S. 1776).

natural rights, with a view toward domestic tranquility, Publius—a pseudonym for one of America’s founders—notes that “A dependence on the people is, no doubt, the primary control on the government; but experience has taught mankind the necessity of auxiliary precautions.”¹¹⁴ Those auxiliary precautions can be found in the design of America’s federalist system.

B. FEDERALISM: ETHICS BY DESIGN

...Sail on, O Ship of State!
Sail on, O Union, strong and great!
Humanity with all its fears,
With all the hopes of future years,
Is hanging breathless on thy fate!”

—Henry Wadsworth Longfellow, “The Building of the Ship”¹¹⁵

The federalist structure of the U.S. Constitution allows for competitive agency between the individual, local jurisdictions, state governments, and the federal government. If deliberative democracy is the moral requirement for government to remain legitimate, and if ambition is to counteract ambition, what are the unique roles, right, duties, and expectations of these actors?

1. The Individual

The Ninth Amendment to the U.S. Constitution grants the powers not explicitly granted to the federal government or the several states to the citizen. The citizen, or individual, constitutes the atomic level of America’s federalist system. Through a variety of means, both direct and indirect, citizens have some degree of control over the course of government policies and activities at all levels. Consistent with Thomas Paine’s view of natural rights, individuals agree to limit their rights when they enter into a social contract

¹¹⁴ THE FEDERALIST NO. 51 (Alexander Hamilton or James Madison) (Yale Law School ed., 2008), http://avalon.law.yale.edu/18th_century/fed01.asp.

¹¹⁵ Henry Wadsworth Longfellow Dana, “Sail on, O Ship of State!” *Colby Quarterly* 2, no. 13 (1950): art. 3, <https://digitalcommons.colby.edu/cgi/viewcontent.cgi?article=1228&context=cq>.

in order to preserve justice.¹¹⁶ So, in theory, individuals are initially born with an unlimited number of rights. The limited enumeration of authorities for both the state and federal governments leaves a significant amount of room for individual exercise of authority. Within this vast realm of citizen sovereignty, there are a variety of philosophies to take into account when considering individual roles and expectations.

a. *The Superior Man Takes the Wheel*

Ancient Chinese philosopher Confucius wrote of the “superior man”—a hypothetical individual whose virtues were consistent with a moral code. Much of the superior man’s virtues are centered on personal responsibility, including personal preparedness for danger. Confucius observed that, during times of peace, the superior man “does not forget that disorder may come. Thus, his person is not endangered, and his States and all their clans are preserved.”¹¹⁷ This same concept carries through one of Aesop’s fables, written roughly 500 years after Confucius’s time, in which a grasshopper, focused on his greatest happiness, squanders away his summer days, playing his fiddle, enjoying the music. The ants, following the “There’s a time for work and a time for play” ethical code, however, worked through the summer to harvest, dry, and store grain. As winter approached and the grasshopper came to the ants looking for food, they turned him away and dismissively told their fiddle-playing neighbor, “Now dance!”¹¹⁸ The grasshopper had not been thinking about the consequences of his failure to prepare until it was too late. This apparent conflict in values between those who prepare and those who do not exists, still, in the present day.

Beyond planned seasonal changes, the superior man would also plan for unexpected shocks or disasters. In Western legal jurisprudence, an “act of God” is defined as “A natural event that causes loss [where] no human force is used and the event cannot be controlled

¹¹⁶ Paine, “Rights of Man.”

¹¹⁷ Confucius, *The I Ching: The Book of Changes*, 2nd edition, trans. by James Legge (Minneapolis, New York: Dover Publications, 1963), 391.

¹¹⁸ Aesop, “The Ants & The Grasshopper,” in *The Aesop for Children*, Library of Congress, adapted from Milo Winter, *The Aesop for Children: With Pictures* (Skokie, IL: Rand, McNally & Co, 1919), accessed October 13, 2017, <http://read.gov/aesop/052.html>.

[sic].”¹¹⁹ This phenomenon is also known as “force majeure,” or an unavoidable accident due to irresistible force. The legal scholarship indicates that “nearly all the various definitions of an act of God require the entire exclusion of human agency from the cause of injury or loss.”¹²⁰ Yet, still, there are insurance policies that are honored for predictable natural disasters, and contracts in business when disruptive market forces were foreseeable. Surely, any predictable act of God was, at some point, subject to some variation of human agency. A human’s decision to build a home in a tornado-prone area will, based on probability, subject that same home to damage by a tornado at some point in time. Since the home was not damaged by a human, or even in some theoretical case moved into the path of the tornado at the last minute by a human, the insurance industry (as long as the policy covers wind damage) would honor the homeowner’s claim that the home was damaged by an act of God.

Craig Fugate, the former FEMA Administrator, has rejected the conventional wisdom that the impacts of natural disasters on humans and the built environment are “acts of God.” He opined in one television interview that “Disasters are disasters, there’s nothing natural about them. We have natural hazards, but they only become disasters how and where we build.”¹²¹ So, knowing the risk of building in a seismic zone and still choosing to live there is not an information problem but rather a decision to accept risk. It was a choice that required the individual to accept any potential consequence. The same could be said about those who do not stockpile the recommended amount of food and water in their homes. In a 2012 survey by FEMA, less than half of American households reported having the recommended seventy-two hours’ worth of food and water stockpiled.¹²² Why did the

¹¹⁹ The Law Dictionary, s.v. “What is Act of God?” accessed October 1, 2017, <http://thelawdictionary.org/act-of-god/>.

¹²⁰ American Jurisprudence, 1 Am. Jur. 2d § 3, at 817.

¹²¹ Magen Brubaker, “Q&A with Former FEMA Administrator Craig Fugate,” *WUFT*, September 29, 2017, <https://www.wuft.org/news/2017/09/29/qa-with-former-fema-administrator-craig-fugate/>.

¹²² FEMA, *Preparedness in America: Research Insights to Increase Individual, Organizational, and Community Action* (Washington, DC: Department of Homeland Security, August 2014), 8, www.fema.gov/media-library-data/1409000888026-1e8abc820153a6c8cde24ce42c16e857/20140825_Preparedness_in_America_August_2014_Update_508.pdf.

grasshopper continue to play his music instead of stockpiling for the winter? Similarly, why do individuals choose not to be adequately prepared for disaster?

The potential culpability of the survivor begins before a catastrophe, when that survivor has responsibilities as a citizen. A citizen's responsibilities as an individual can be explained through the lens of contract theory. In the seventeenth century, Hobbes defined the social contract in an anarchic context, in which man is obliged or duty-bound not because it is in his nature, but because of his "Feare of some evill consequence upon the rupture."¹²³ In the eighteenth century, Kant focused on the social contract as a means of preserving humanity. He stressed individual morality, writing that "It is not enough that the action does not conflict with humanity in our person as end in itself; it must also harmonize with it."¹²⁴ In Kant's case, being afraid of being punished was not the primary motivation; for Hobbes, consequences are all that matter. Bentham, too, might argue that the grasshopper seemed unworried about consequences. However, that argument assumes a specific epistemology. Foreknowledge of the outcome is not always possible given the lack of available, validated information about the situation. So if a decision was justified on the basis of ends, rather than rules, and the outcome was suboptimal, does that decision constitute an ethical breach? What does intent count for?

b. In God We Trust

Through what Søren Kierkegaard referred to as the "dizziness of freedom," he proposes that our individual choices are borne out of a trifecta of freedom, anxiety, and ignorance. Anxiety goes away if we abandon our freedom to make our own choices, but, then again, so does our freedom to choose. So we can restrict our choices through rules. Those rules can be virtue based (faith, for example) or based on some sort of legal or professional code of conduct. In the absence of understanding, Kierkegaard suggests that faith can be relied upon "to make the despair properly decisive."¹²⁵ Would a public

¹²³ Hobbes, *Leviathan*.

¹²⁴ Kant, Wood, and Schneewind, *Groundwork for the Metaphysics of Morals*, 48.

¹²⁵ Søren Kierkegaard, *Concluding Unscientific Postscript* (Princeton, NJ: Princeton University Press, 1941), 220–230.

awareness and outreach campaign have worked for the grasshopper? It would have resolved the issue of ignorance. If that did not work, the ants (or some other governing body) could restrict his freedom by fining him if he failed to prepare. What if the grasshopper valued his music more and chose to pay the fine? Kierkegaard stresses the importance of fear and anxiety in personal ethical choice, writing that “learning to know anxiety is an adventure which every man has to affront if he would not go to perdition either by not having known anxiety or by sinking under it.”¹²⁶ In other words, fear is a great motivator, and if whatever creates that fear does not kill you, it can provide salvation (in both the literal and spiritual sense of the term).

Understanding the role of the citizen in America’s social contract is not complete without a treatment of religious and spiritual influence at the individual and group level. Religion has been a part of America’s civic tradition since the country’s inception. Thomas Jefferson wrote in the Declaration of Independence that “all men ... are endowed by their Creator with certain inalienable rights.”¹²⁷ The First Amendment to the Constitution guarantees free exercise of religion, and in the same sentence also denies the government the ability to establish a national religion. The former clause, as Jefferson wrote, was to allow every citizen the freedom to profess his beliefs based on “the inductions of his own reason and the serious convictions of his own inquiries.”¹²⁸ The latter clause, as James Madison wrote, is intended to maintain the purity of religion, free of undue influence by the government.¹²⁹ So while the government is not allowed to favor a specific religion, the religious landscape at the time of the nation’s founding was relatively monochromatic. It is therefore unlikely that the founders foresaw the present situation where a convergence of world religions raises new questions about the role of personal faith in civic life. In his Farewell Address, President George Washington said that “reason and experience both

¹²⁶ Søren Kierkegaard, *Kierkegaard’s The Concept of Dread*, translated by Walter Lowrie (Princeton, NJ: Princeton University Press, 1957), 139.

¹²⁷ THE DECLARATION OF INDEPENDENCE para. 2 (U.S. 1776).

¹²⁸ Thomas Jefferson, to Virginia Baptist Association of Chesterfield, November 21, 1908, Thomas Jefferson Foundation, accessed June 21, 2018, <http://tjrs.monticello.org/letter/2386>.

¹²⁹ James Madison, to Edward Livingston, July 10, 1822, Founders Online, accessed June 21, 2018, <https://founders.archives.gov/documents/Madison/04-02-02-0471>.

forbid us to expect that national morality can prevail in exclusion of religious principle.”¹³⁰ In that letter, Washington evoked the concept of a civic virtue closely aligned to a faith-based morality, which, despite its seemingly ecumenical tone, seems at odds with modern concepts of religious pluralism. A 2014 study showed that the Christian population in the United States continues to see both a relative and absolute decline.¹³¹ There are now more Jews, Muslims, Buddhists, Hindus, other world religions, and even Atheists choosing to follow the serious convictions of their own inquiries.

Robert Wuthnow, a modern religious sociologist, notes just such a discursive tension between Americans’ civic lives and their faiths.¹³² He highlights the diminishment of certain religious commitments by those who seek some “easy least-common-denominator civic culture.”¹³³ Similarly, John Rawls has noted that the “dogmatism and intolerance” of religion could be antithetical to his conception of justice. Even with that in mind, Rawls also cautioned against treating individual morality and religion as “mere preferences.”¹³⁴ The preferences (or will) of the people are, in fact, the essence of the social contract within a democracy.

While religious epistemology is chiefly concerned with an intuitive understanding of moral precepts based in faith, America’s civic institutions are grounded in empirical observation, rooted in the reason of the Enlightenment. As Thomas Jefferson explained this ideal, “the legitimate powers of government reach actions only, & not opinions.”¹³⁵ But, in a disaster, actions must be taken that are not purely theoretical. So when the actions of civic institutions imperil an individual’s or group’s faith-based values, their deeply-held

¹³⁰ George Washington, Farewell Address, 1796, Yale Law School, accessed June 20, 2018, http://avalon.law.yale.edu/18th_century/washing.asp.

¹³¹ “America’s Changing Religious Landscape,” Pew Research Center, May 12, 2015, <http://www.pewforum.org/2015/05/12/americas-changing-religious-landscape/>.

¹³² Robert Wuthnow, *America and the Challenges of Religious Diversity* (Princeton, NJ: Princeton University Press, 2005), 310.

¹³³ Wuthnow, 311

¹³⁴ Rawls, *Theory of Justice*, 214.

¹³⁵ Thomas Jefferson, to The Danbury Baptists, January 1, 1802, Monticello Digital Classroom, accessed June 21, 2018, <https://classroom.monticello.org/view/72414/>.

beliefs are called into question. In the distribution of meals, the government certainly has the opportunity to create such a conflict.

The dietary rules in Judaism, based on Leviticus, explicitly identify pork as an unclean food. Most Christian denominations do not adhere to this requirement, with one version of the Bible noting that these rules “were probably based on traditional ideas of hygiene, but here they are given a moral, religious basis.”¹³⁶ In a disaster, most Christians would not think twice about consuming pork whether or not it was the only food available for them to survive. If there were other convenient options, a Jew’s faith-based values—namely, keeping kosher—would prevent him from consuming pork. But what about a situation in which pork is the only practically available option? In that case, the Talmud—Jewish religious law—describes a concept known as *pikuach nefesh*, which states that, when in imminent danger, “one may feed him even impure foods on Yom Kippur or any other day.”¹³⁷ This is one example of a religious precept that has been modified from received dogma into a practical interpretation suited to the complexities of reality. Islam similarly describes a concept known as *darura* (necessity), which grants flexibility to religious commitments in life-threatening situations; so pork or other non-halal foods can be consumed in an exigent circumstance.¹³⁸

When planning for disaster response, it thus becomes important to anticipate that religious commitment, coupled with practical realities, will create some sort of tension with previously agreed-upon elements of the social contract. From the government’s perspective, hydration and feeding missions can avoid ethical peril by providing water and meal options that are universally, or at least generally, acceptable. Perhaps they are not preferred, but at least they are acceptable. From an individual perspective, one must weigh the potential negative outcomes against personal convictions. So the question of

¹³⁶ Lev. 11:1ff, *The New American Bible*, Basic Youth Edition (Winona, MN: Saint Mary’s Press, 2005), 103.

¹³⁷ Yoma 83a:11 (William Davidson Talmud).

¹³⁸ Yasmin Hanani Mohd Safian, “Necessity (*darura*) in Islamic Law: A study with special reference to the Harm Reduction Programme in Malaysia” (PhD thesis, University of Exeter, 2010), <https://ore.exeter.ac.uk/repository/bitstream/handle/10036/112862/YasminhananiMS.pdf?sequence=1&isAllowed=y>.

epistemology arises again—how sure are you that your faith-based understanding of what is morally right or wrong is true, balanced against empirical evidence that prolonged thirst and/or hunger risks your very survival? This becomes a personal decision—spiritual, versus physical, salvation.

c. Citizen-Survivors as the First First Responders

In her book *The Unthinkable*, journalist Amanda Ripley discusses how those affected by disaster survive. One of her primary conclusions is that people will initially help themselves, if they can. Failing that, neighbors and even nearby strangers will be the first to aid, well before even local government first responders arrive.¹³⁹ The U.S. Department of Homeland Security has recognized this phenomenon with its Stop the Bleed campaign, which trains the general public to stanch blood loss in the aftermath of a terrorist attack or other incident causing traumatic injury.¹⁴⁰ Similarly, in 2010, the American Red Cross also relaxed the requirement for cardiopulmonary resuscitation (CPR) certification, advocating for limited use of compression-only CPR by otherwise untrained bystanders.¹⁴¹ There is a notable trend in the recognition of citizens as assets in the policies and pronouncements of U.S. public safety organizations.

During his tenure as FEMA Administrator, Craig Fugate fought for a lexical change in how we describe individuals impacted by disaster, toward use of the term “survivors” and away from “victims.” His argument was that “they’re the closest to it and they need to be part of the team. The victims are the ones we lost and we’ll mourn and bury.”¹⁴² Fugate’s reframing may seem like a superficial Beltway policy or public messaging tweak, but in this case, words do matter. Laska, Enarson, and other disaster sociologists have shown that by denying “survivor agency” and framing individuals as victims, we promote

¹³⁹ Amanda Ripley, *The Unthinkable: Who Survives When Disaster Strikes—And Why*, Kindle ed. (New York: Crown Publishing Group, 2009), loc 117.

¹⁴⁰ “Stop the Bleed,” Department of Homeland Security, last modified June 7, 2018, <https://www.dhs.gov/stopthebleed>.

¹⁴¹ “Compression-Only CPR Okay in Certain Situations,” American Red Cross, accessed April 26, 2018, <http://www.redcross.org/news/article/Compression-Only-CPR-Okay-in-Certain-Situations>.

¹⁴² Brubaker, “Q&A with Craig Fugate.”

structural violence, which denies survivors a positive role in the disaster recovery process. If the government and the media keep telling you that you are helpless, you begin to internalize that idea. After Hurricane Andrew in 1992, one survivor in south Florida spoke to reporters about shortfalls in government relief, asking, “Where are they to help us? The Americans that pay the taxes, that do the things, that follow the rules, that help everybody else in the world.... Where are they when we need the help?”¹⁴³

For some survivors, following the rules, paying the taxes, and doing the things is not enough in a disaster. Fugate recognized the role of the citizen beyond even having agency in their own response, but also in helping their neighbors. He stated, “It constantly amazes me how when we talk about planning a response we always talk about what the government is going to do, but we never recognize the role of the public.”¹⁴⁴ One example of citizens taking on responsibility and recognizing their role in disaster response is the “Cajun Navy.” This so-called navy is actually a loosely affiliated volunteer group that has supported first responder and U.S. Coast Guard water rescues along the Gulf Coast since at least Hurricane Katrina in 2005.¹⁴⁵ The citizens who comprise this group typically own airboats or other watercraft designed to traverse swamps or rivers, which often pose similar hazards to navigation as flooded urban environments. The mission statement for the Louisiana Cajun Navy reads as follows: “We the people of Louisiana refuse to stand by and wait for help in the wake of disasters in our State. We rise up and unite and rescue our neighbors!”¹⁴⁶ In 2016, during historic flooding in and around Baton Rouge, the Cajun Navy again helped themselves and their neighbors in Louisiana escape peril.¹⁴⁷ Then, following Hurricane Harvey’s prolonged flooding impacts to Houston, America’s fourth

¹⁴³ Bryan Norcross, “Hurricane Andrew: As it Happened, pt. 2 (WTVJ Special),” YouTube video, posted by StormSpotterMike, August 21, 2012, <https://www.youtube.com/watch?v=ePwUVszDy-o>.

¹⁴⁴ Brubaker, “Q&A with Craig Fugate.”

¹⁴⁵ “How Citizens Turned into Saviors after Katrina Struck,” CBS, August 29, 2015, <https://www.cbsnews.com/news/remembering-the-cajun-navy-10-years-after-hurricane-katrina/>.

¹⁴⁶ “About Us,” Louisiana Cajun Navy, accessed January 14, 2018, <https://louisianacn.com/about-us/>.

¹⁴⁷ David Lohr and Kim Bellware, “Louisiana’s ‘Cajun Navy’ Is a 100% Volunteer Group That’s Helping Flood Victims,” *Huffington Post*, August 29, 2017, https://www.huffingtonpost.com/entry/cajun-navy-louisiana_us_57bb1bf3e4b00d9c3a18c9d9.

most populous city, the Cajun Navy put their boats on trailers, hitched the trailers to their trucks, and drove west to help their neighbors in Texas.¹⁴⁸

The ability of groups of individuals, acting outside the constraints of government, can help to rapidly discover innovative solutions based on unique geographic and cultural assets. One such asset that could be an advantage to citizen responders following an earthquake in the Pacific Northwest are cargo bikes. A July 2014 drill in Portland, Oregon, tested the viability of cargo bikes for delivering disaster relief supplies.¹⁴⁹ Citizens preparing for disaster to protect themselves and their family, and also—once disaster strikes—reaching out to help their neighbors could be categorized as a manifestation of virtue ethics.

2. The Local Jurisdiction

a. *The Ward-Republics*

Local government is not mentioned once in the U.S. Constitution, but Alexis de Tocqueville recognized the importance of a government closest to the people. He wrote of “provincial objects,” “which can only be properly treated in that locality.”¹⁵⁰ De Tocqueville observed town hall meetings in the towns and villages of New England, of which Ralph Waldo Emerson would later write, “the people truly see that they are the lords of the soil.”¹⁵¹ Another form of local government, counties, have been recognized as “one of the oldest forms of local government in America,” dating back to the shires of seventeenth-century Virginia.¹⁵² While some of these community groupings were necessary to organize local services, they predate our national social contract. The benefits

¹⁴⁸ Edmund D. Fountain and Trip Gabriel, “‘Cajun Navy’ Scours Houston Floodwaters for Stranded Residents,” *New York Times*, August 30, 2017, <https://www.nytimes.com/2017/08/30/us/cajun-navy-brings-its-rescue-fleet-to-houstons-flood-zone.html>.

¹⁴⁹ Joseph Rose, “Portland Cargo Bike Disaster Drill: When Cascadia Earthquake Hits, City’s Bicyclists Will Deliver Relief,” *OregonLive*, July 19, 2014, http://www.oregonlive.com/commuting/index.ssf/2014/07/portland_cargo_bike_disaster_d.html.

¹⁵⁰ Alexis de Tocqueville, *Democracy in America*, vol. 1 (Project Gutenberg, 2006), <https://www.gutenberg.org/files/815/815-h/815-h.htm#link2HCH0015>.

¹⁵¹ Joseph F. Zimmerman, “Law-Making by Assembled Citizens,” in *The New England Town Meeting: Democracy in Action* (Westport, CT: Praeger, 1999), 3.

¹⁵² Presidential Proclamation 6261, March 19, 1991.

of these associations were certainly recognized by America's founding fathers. Thomas Jefferson considered local government as a necessary element of checks and balances, and advocated further division of counties into "wards," where such provincial objects as schools could be carried out by wardens. In one letter, Jefferson writes of an idealized government "where every man is a sharer in the direction of his ward-republic."¹⁵³ If we are to understand the term ward in its archaic definition, a key function of the local government is protection.¹⁵⁴ In that sense, public safety seems a critical concern in the design of local government.

In the context of modern disaster response, the National Response Framework (NRF) lists "tiered response" as one of its guiding principles, asserting that "Most incidents begin and end locally and are managed at the local level."¹⁵⁵ From an operational perspective, local governments bring local knowledge of people, infrastructure, vulnerabilities, impacts, and available resources. Though, in an era of increased demand for public services at the local level, combined with falling revenues, local budgets are already stretched without a disaster.¹⁵⁶ In a catastrophic disaster, the NRF's concept of tiered response anticipates that a local government's resources will be quickly overwhelmed, so the first responders will rapidly need reinforcements and local administrations will likewise need rapid budget relief.

Under federal law, a presidential disaster declaration can only be approved when it has been shown "that effective response is beyond the capabilities of the State and the affected local governments."¹⁵⁷ In Oregon, state statute and local ordinances allow for local emergency declarations to allow "flexibility in managing resources under emergency

¹⁵³ Thomas Jefferson, to Joseph C. Cabell, February 2, 1816, National Archives, accessed January 30, 2018, <https://founders.archives.gov/documents/Jefferson/03-09-02-0286>.

¹⁵⁴ *Oxford English Dictionary*, s.v. "Ward," accessed June 21, 2018, <https://en.oxforddictionaries.com/definition/ward>.

¹⁵⁵ FEMA, NRF, 6.

¹⁵⁶ Susan K. Urahn, "The Local Squeeze: Falling Revenues and Growing Demand for Services Challenge Cities, Counties, and School Districts" (report, Pew Charitable Trusts, 2012), <http://www.pewtrusts.org/en/research-and-analysis/reports/0001/01/01/the-local-squeeze>.

¹⁵⁷ Procedure for Declaration, 42 U.S.C. § 5170 (2006).

conditions.”¹⁵⁸ This is typically the first step a local government takes prior to requesting an emergency declaration from the governor. The governor of Oregon is required by state statute to issue a proclamation, which directs state agencies to utilize their resources to carry out “activities designed to prevent or alleviate actual or threatened damage due to the emergency” to assist local communities.¹⁵⁹ The state of Washington’s statutes vest the governor with total control over emergency management functions throughout the state “in the event of disaster beyond local control.”¹⁶⁰ As a mechanism for providing any type of federal assistance, any requests from the local government must come up through the state government. Throughout the United States, the state is responsible for any requests to the federal government.

In 1992, Hurricane Andrew devastated south Florida, hitting southern Dade County the hardest. President George H.W. Bush initially praised the “prompt” and “massive” response.¹⁶¹ Meanwhile, the emergency manager of Dade County, Kate Hale, made an impassioned plea, through the media, for resources from the state and federal governments. She said that the county had “to take over and manage disaster relief,” running their own distribution networks, setting up and managing staging areas, and organizing volunteers. She further asserted, “That is not the role of the devastated government.”¹⁶² When asked why the federal government’s response had been so slow, President Bush responded that he was “waiting for a formal request” from Governor Lawton Chiles.¹⁶³ The governor

¹⁵⁸ Oregon Office of Emergency Management, “Emergency Declaration Guidelines for Local Elected and Appointed Officials” (emergency guidelines, Oregon Military Department, 2015), 2, http://www.oregon.gov/OEM/Documents/decl_guide.pdf.

¹⁵⁹ Oregon Rev. Stat. § 401.168 (2015), <https://www.oregonlaws.org/ors/401.168>.

¹⁶⁰ Washington Rev. Code Title 38, Ch. 38.52 § 38.52.050 (1997), <http://app.leg.wa.gov/RCW/default.aspx?cite=38.52.050>.

¹⁶¹ Robert Pear, “Hurricane Andrew; Breakdown Seen in Storm Aid,” *New York Times*, August 29, 1992, <http://www.nytimes.com/1992/08/29/us/hurricane-andrew-breakdown-seen-in-us-storm-aid.html>.

¹⁶² “Hurricane Andrew, We Need Help! Part 1,” YouTube video, posted by moviemagg, September 1, 2009, <https://www.youtube.com/watch?v=qV3HWSdxTC4>.

¹⁶³ Pear, “Hurricane Andrew.”

reportedly claimed that formal paperwork seemed “silly” given the apparent devastation.¹⁶⁴

In September 2017, during the response to Hurricane Maria in Puerto Rico, Carmen Yulín Cruz, the mayor of San Juan, spoke in English to a corps of national and international media outlets, warning them that “if we don’t get the food and the water into people’s hands, what we are going to see is something close to a genocide.”¹⁶⁵ Her call to action began with a request to FEMA and the President, then seemingly shifted away from the concept of tiered response by putting out a “mayday call all over the world.”¹⁶⁶ When asked for his thoughts on the mayor’s comments, FEMA Administrator Brock Long’s answer reemphasized the concept of tiered response by focusing on federal support to the state government. He said, “We filtered out the mayor a long time ago. We don’t have time for the political noise. The bottom line is, is that we are making progress every day in conjunction with the governor.”¹⁶⁷

In the cases of Ms. Hale and Mayor Cruz, as local officials, their public statements reflect a recognition of the role of local official as protector. While some may take issue with their actions or their words, or even refute the factual basis upon which they spoke or acted, all of it was framed around the basis of protecting their local people. While much of their activities centered on steering media coverage and the public discourse to achieve outcomes in their interest, other local officials have taken actions that have tangibly increased their ethical (and legal) peril.

¹⁶⁴ Eliot Kleinberg, “Hurricane Andrew’s Hard Lessons,” *Palm Beach Post*, June 1, 2012, <http://www.palmbeachpost.com/weather/hurricanes/hurricane-andrew-hard-lessons/UnxNE2cNiqv3kV7LGWLEmO/>.

¹⁶⁵ David Choi, “‘We Are Dying’: Puerto Rico Mayor Says the Island Is ‘Inching Close to a Genocide,’” *Business Insider*, September 29, 2017, <http://www.businessinsider.com/puerto-rico-crisis-hurricane-maria-san-juan-mayor-2017-9>.

¹⁶⁶ Choi.

¹⁶⁷ Ellie Smith, “San Juan Mayor’s Complaints Dismissed as ‘Political Noise’ by FEMA Chief,” ABC News, October 8, 2017, <http://abcnews.go.com/Politics/san-juan-mayors-complaints-dismissed-political-noise-fema/story?id=50353414>.

b. *We (the People) and Billy McGee*

Freedom's just another word for nothing left to lose.

—“Me and Bobby McGee”¹⁶⁸

One week after Hurricane Katrina made landfall along the Mississippi Gulf Coast, survivors in southern Mississippi were still in need of critical supplies. By this point, power was still out across a wide swath of the state. As a result, perishable food had begun to rot days earlier. Any provisions that could survive the sweltering heat of the late Mississippi summer were running dangerously low, or had already been consumed. Citizens were hot, thirsty, and hungry. One acute need was for ice, especially for medicine requiring refrigeration.

Forrest County Sheriff Billy McGee learned of a FEMA staging area located at Camp Shelby, a military reservation. According to a local media source, “[Camp Shelby] had everything the people of Forrest County needed and didn’t have.”¹⁶⁹ Sheriff McGee arrived with two deputies, who proceeded to hijack two refrigerator trucks full of ice, while he spoke with the FEMA staging area manager. At one point in their conversation, according to the sheriff, the FEMA employee told him, “You’ve got a [sic] ice problem, and I [sic] got a communications problem.”¹⁷⁰ After throwing a Mississippi National Guard soldier on the ground and handcuffing him, the sheriff and his deputies escorted the trucks to local distribution sites around the county.

In his own defense, recorded a decade after his Robin Hood–like heist, Sheriff McGee told a reporter, “I stole what is ours. We are the Federal Government. There is no money in Washington without us.”¹⁷¹ In the context of America’s social contract, the sheriff’s actions (and words) create a conflict. On the one hand, the sheriff illegally stole

¹⁶⁸ Roger Miller, “Me and Bobby McGee,” written by Kris Kristofferson and Fred Foster, released 1970 on *Roger Miller 1970*, Smash Records (4) SRS 67129.

¹⁶⁹ “Katrina Untold: ‘We Needed Ice’—Billy McGee,” WDAM, August 19, 2015, www.wdam.com/story/29832850/katrina-untold-we-needed-ice-billy-mcgee.

¹⁷⁰ WDAM.

¹⁷¹ WDAM.

federal property from a state government facility and assaulted a member of the state's militia; on the other, he helped provide assistance in a time of crisis (at least by his own account and those interviewed by a sympathetic local news outlet). Nevertheless, the FEMA employee identified several additional practical issues that have a direct impact upon any ethical analysis—information asymmetry and the bureaucracy. Information asymmetry arises from an imbalance of knowledge and is one of the information problems in economics, while the bureaucracy is a procedures-focused institution where means can become ends but broader ends are ignored. The FEMA employee's "communications problem" meant that, despite an identified need at the local level, no requirement had been routed back to him to dispatch any ice and to release it to Forrest County, in accordance with normal procedures.

3. The State Government

The Tenth Amendment to the U.S. Constitution delegates those powers not granted to the federal government to the states, as well as the people. This is the scaffolding upon which America's federalist system rests. Publius's concept of ambition counteracting ambition means that the federal government should not have all of the power. Given the relatively circumscribed role of the federal government, the states have an important role to play in disaster response. One group of legal scholars asserts that states "have plenary authority to respond to disaster in almost any way, so long as they do not violate constitutional rights and are not legitimately preempted by Congress."¹⁷² Federal disaster policy also reflects a recognition of the state's preeminent role. For example, the NRF asserts that "the public safety and welfare of a state's residents are the fundamental responsibility of every governor."¹⁷³ This demonstrates a recognition by the federal government that the governors are the primary point for federal support to the citizens of a state.

¹⁷² Daniel A. Farber et al., "Who's in Charge?" in *Disaster Law and Policy*, 2nd ed. (Frederick, MD: Aspen Publishers, 2009), 91.

¹⁷³ FEMA, NRF, 13.

During a panel discussion about crisis leadership, Missouri Governor Jay Nixon recalled lessons from leading the state's response to the 2011 Joplin tornado and the 2014 Ferguson unrest. He noted that for political leaders, "All of it requires your personal attention. That speaks volumes when you're speaking for all the people of your state."¹⁷⁴ While local officials are often framed as the protectors of their community, governors also see their roles as speaking for the people. Governors, too, are the legal focal point through which the residents of the several states can access federal assistance.

In the aftermath of Hurricane Andrew in 1992, a visibly exhausted Lawton Chiles—then governor of Florida—complained to a local reporter that there were a lot of distant critics, and that they should come help if they had a better way. He implored the federal government for assistance, asserting that "the army can build a city in a day out here. The army took care of the whole Persian Gulf in three days."¹⁷⁵ In this case, Governor Chiles was seeking federal aid (specifically from the military) for the residents of Florida. As noted earlier in the discussion about Dade County, Governor Chiles had not submitted a formal request, which was necessary to spur action on the part of the President.

During the congressional investigation into the preparedness and response for Hurricane Katrina in 2005, former FEMA Director Michael Brown testified that his "biggest mistake was not recognizing by Saturday [August 27] that Louisiana was dysfunctional."¹⁷⁶ Clarifying his remarks later during the same hearing, he explained, "My mistake was in [not] recognizing that, for whatever reason, [New Orleans] Mayor [Ray] Nagin and [Louisiana] Governor [Kathleen] Blanco were reticent to order a mandatory evacuation."¹⁷⁷ As the final congressional report on Katrina notes, "Neither Blanco nor Nagin ... ordered a mandatory evacuation until Sunday morning [August 28—the day

¹⁷⁴ Jay Nixon, "Leadership in Time of Crisis," C-SPAN, video, February 22, 2016, <https://www.c-span.org/video/?405047-1/discussion-homeland-security-secretary-jeh-johnson-crisis-leadership>.

¹⁷⁵ Norcross, "Hurricane Andrew."

¹⁷⁶ Ted Barrett, "FEMA's Brown Puts Blame on Louisiana Officials," CNN, September 28, 2005, <http://www.cnn.com/2005/POLITICS/09/28/katrina.brown/index.html>.

¹⁷⁷ Barrett.

before Katrina made landfall].”¹⁷⁸ The title of that report, *A Failure of Initiative*, is often interpreted as an indictment of the federal response, but Congress also found fault with state and local personnel, policies, and actions.

Between 1992 and 2006, the federal government’s operational approach to disaster response shifted. Rather than waiting for a formal state request, the federal government began to pre-position resources in the wake of Hurricane Andrew.¹⁷⁹ When this was not enough to avert a catastrophe following Hurricane Katrina, Congress proffered the concept of federalizing all disaster response.¹⁸⁰ The governor of Florida then was Jeb Bush, who testified, “I can say with certainty that federalizing emergency response to catastrophic events would be a disaster as bad as Hurricane Katrina.”¹⁸¹ This view is echoed by disaster researchers, who have written that “Shifting crisis management authority up widens the gap between decision-makers and the crisis scene.”¹⁸² So, since Katrina, what is the proper role of the federal government in domestic disaster relief?

4. The Federal Government

The Constitution provides for a federal republic form of government. The Constitution’s “necessary and proper” clause provides for federal instrumentalities.¹⁸³ The Supreme Court upheld these instrumentalities in *McCulloch v. Maryland*. That case provided that the federal government could imply “a right incidental” to those explicitly granted in the Constitution, and “conducive to its beneficial exercise,” with some clear

¹⁷⁸ U.S. House Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina, *A Failure of Initiative: Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina*, H. Rept. 109-377 (Washington, DC: U.S. Government Printing Office, 2006), 109.

¹⁷⁹ Robert Siegel, “25 Years Later: How Hurricane Andrew Impacted Emergency Response,” NPR, August 24, 2017, <https://www.npr.org/2017/08/24/545901808/25-years-later-hurricane-andrews-devastation-lingers>.

¹⁸⁰ Jeb Bush, “Think Locally on Relief,” *Washington Post*, September 30, 2005, <http://www.washingtonpost.com/wp-dyn/content/article/2005/09/29/AR2005092901636.html>.

¹⁸¹ U.S. House, *A Failure of Initiative*, 322.

¹⁸² Boin and ‘t Hart, “Aligning Executive Action in Times of Adversity,” 186. <https://doi.org/10.1057/9781137010261>.

¹⁸³ U.S. Const. art. 1 § 8.

limitations. Those limitations, our first Chief Justice John Marshall wrote, in the unanimous opinion of the Court, were based on the following precept: “Let the end be legitimate, let it be within the scope of the constitution, and all means which are appropriate, which are plainly adapted to that end, which are not prohibited, but consist with the letter and spirit of the constitution, are constitutional.”¹⁸⁴

One of those beneficial instrumentalities is FEMA. Federal law provides for federal resources to be used for the “provision of food [and] water.”¹⁸⁵ Federal regulations describe how that food and water will be paid for, to include the cost-sharing agreements between the state and federal government.¹⁸⁶ FEMA provides further detail to its disaster relief authorities in various operational plans under the NRF, including its concept for the provision of meals and water to state and local governments. Given that state governments have a responsibility under both law and regulation to share the financial burden of the provision of meals and water by the federal government, are there limits to this burden that will avoid bankrupting a state government?

One landmark court case, which addressed the proposed withholding of federal highway funding to the state of Oklahoma based on the unlawful political activities of a member of the State Highway Commission, determined that the federal government “does have power to fix the terms upon which its money allotments to states shall be disbursed.”¹⁸⁷ So the federal government can agree to pay for the entire cost if the state would otherwise be facing an untenable choice—between providing relief to its citizens and insolvency. If the federal government wants to create a disincentive for continued provision of relief supplies, it has broad authority under regulation to increase the state’s cost share. Although this remains a theoretical problem, the Supreme Court has set some constitutional limits to federal economic leverage. In his majority opinion on the individual mandate element of the Affordable Care Act, Chief Justice John Roberts laid out a

¹⁸⁴ *McCulloch v. Maryland*, 17 U.S. 316 (1819).

¹⁸⁵ *Essential Assistance*, 42 U.S.C. § 5170b (2006).

¹⁸⁶ *Cost-Share Adjustments*, 44 C.F.R. § 206.47 (2010).

¹⁸⁷ *Oklahoma v. Civil Service Commission*, 330 U.S. 127 (1947).

limitation on the federal government's spending power as well as its power to regulate interstate commerce, noting that the mandate constituted an "economic dragooning."¹⁸⁸

FEMA is fundamentally the federal government's backstop for disaster risk. However, the provision of social backstops, like insurance or disaster relief, has been shown, in some cases, to increase overall risk. This concept, referred to by economists as "moral hazard," has been around since the 1600s, when British ship insurers worried about whether or not their business model encouraged risk-taking behavior.¹⁸⁹ A more recent example of this is the U.S. National Flood Insurance Program, which, it is argued, incentivizes individuals to live in areas that frequently flood.¹⁹⁰ While flood insurance is a FEMA program, it is separate and distinct from disaster relief provided under the Stafford Act. That relief includes life-sustaining commodities like water and meals. It is difficult to find anybody who argues that providing water and meals to Americans in the wake of a disaster creates a moral hazard. If it is a given that the federal government will provide such commodities as disaster relief, what are the terms of service or expectations for the timeliness, quantity, quality, and duration of such relief?

Dade County Emergency Manager Kate Hale pleaded during a press conference following Hurricane Andrew in 1992, "We have a catastrophic disaster, please come down and help us! Where the hell is the cavalry on this one?"¹⁹¹ Specifically identifying a need for hydration and feeding support, she continued, "If we do not get more food and water into the south end [of Dade County] in a very short period of time, we are going to have more casualties, because we're going to have people who are dehydrated, who are without food, babies who need formula."¹⁹² Hale reiterated the key "taskings" of the federal

¹⁸⁸ National Federation of Independent Business v. Sebelius, 567 U.S. 52 (2012).

¹⁸⁹ Allard E. Dembe, and Leslie I. Boden, "Moral Hazard: A Question of Morality?" *New Solutions: A Journal of Environmental and Occupational Health Policy* 10, no. 3 (2000): 257–279. doi.org/10.2190/1GU8-EQN8-02J6-2RXX.

¹⁹⁰ James Bovard, "Dear Texas, How Many Times Do We Have to Rebuild the Same House? (You're Next Florida)," USA TODAY, September 1, 2017, <https://www.usatoday.com/story/opinion/2017/09/01/harvey-proves-flood-subsidies-must-end-james-bovard-column/619926001/>.

¹⁹¹ Gary Nelson, "Hurricane Andrew Remembered: 20 Years Later," CBS Miami, August 24, 2012, <http://miami.cbslocal.com/2012/08/24/hurricane-andrew-remembered-20-years-later/>.

¹⁹² moviemagg, "Hurricane Andrew, We Need Help."

government's catastrophic response plan (a precursor to the NRF, with similar recognition of FEMA's role as federal coordinator). Invoking FEMA's deontological responsibility, she said, "That tasking is very specific and it takes in any number of agencies and if they [FEMA] can't get it from one, it's their job to get it from another, but it's their job to get it and get it down here."¹⁹³ Her assertion was that, since Dade County had already established staging areas and distribution procedures, all that FEMA and its partner agencies had to do was get those commodities to the locals.

In 2004, the year before Hurricane Katrina, FEMA and Louisiana held a joint hurricane exercise, with the fictitious Hurricane Pam barreling toward New Orleans.¹⁹⁴ In a read-out of that exercise, Louisiana's deputy director of emergency preparedness said, "Over the next 60 days, we will polish the action plans developed during the Hurricane Pam exercise. We have also determined where to focus our efforts in the future."¹⁹⁵ The congressional investigation determined that many of the items within the action plan were not implemented prior to Katrina's landfall. Their report notes that "Some state and parish officials said they saw Pam as a 'contract' of what the various parties were going to do, and the federal government did not do the things it had committed to doing."¹⁹⁶ One of those things was replenishment of sheltering supplies, which typically includes water and meals. When questioned about this by the same committee, then-FEMA Director Michael Brown testified that if Americans expected every individual to receive meals and water immediately following a disaster, we needed "a serious public policy debate about what the role of FEMA and the federal government is in disasters."¹⁹⁷ That debate was resolved by Congress within a year after Brown's resignation.

¹⁹³ moviemagg.

¹⁹⁴ "Hurricane Pam Exercise Concludes," FEMA, July 23, 2004, <https://www.fema.gov/news-release/2004/07/23/hurricane-pam-exercise-concludes>.

¹⁹⁵ FEMA.

¹⁹⁶ U.S. House, *A Failure of Initiative*, 83.

¹⁹⁷ "Federal Response to Hurricane Katrina, Morning," C-SPAN video, September 27, 2005, <https://www.c-span.org/video/?189060-1/federal-response-hurricane-katrina-morning>.

The committee's final report recognized that the federal government has a responsibility to not only replenish supplies once a need is identified, but also to preemptively anticipate that need. They wrote, "DHS is expected to rapidly—and proactively—provide critical resources to assist and augment the ongoing state and local responses."¹⁹⁸ Since Katrina, federal officials seem to have learned the importance of being proactive, not only for actual response outcomes but also for public perceptions of how the response is going. In the aftermath of Superstorm Sandy in 2012, President Obama gave a speech in which he implored federal agencies "to make sure that we are getting the resources where they're needed as quickly as possible."¹⁹⁹ The idea of a contract for government performance as a component of the social contract existed before Katrina. The final report of the 9/11 Commission insisted that "the American people are entitled to expect their government to do its very best," including being entitled to objectives that allow citizens to measure its performance, as well as means by which they can fix deficiencies through elected leadership should it fail to perform.²⁰⁰ One corollary to this restatement of values by the 9/11 Commissioners asserts, "If the people are entitled, then the government is obligated."²⁰¹ Yet there is a part of the government (at all levels), that always seems opaque and inaccessible to the public it exists to serve—the bureaucracy.

C. CLERKS IN THE MACHINE

Bureaucracies, while a rational and efficient artifact of the Enlightenment implementation of the social contract, have long seemed as lacking a certain humanity by those with more romantic or humanist inclinations. Craig Fugate, the former FEMA Administrator, has publicly noted that his distaste for bureaucracy crystallized during the summer of 2014, when the unaccompanied alien children crisis at the U.S. southwest

¹⁹⁸ U.S. House, *A Failure of Initiative*, 36.

¹⁹⁹ Barack Obama, "Remarks by the President at the American Red Cross," Obama White House, October 30, 2012, <https://obamawhitehouse.archives.gov/the-press-office/2012/10/30/remarks-president-american-red-cross>.

²⁰⁰ National Commission on Terrorist Attacks upon the United States, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks upon the United States*, official government edition (Washington, DC: U.S. Government Printing Office, 2004), 365.

²⁰¹ Zack, *Ethics for Disaster*, 83.

border laid bare the inefficient and inflexible processes of the U.S. Department of Health and Human Services. He recalls, “I developed this profound hatred for the clerks of the bureaucracy who were so unwilling to see the problem because they were so unwilling to change what they were doing.”²⁰² FEMA itself has not been immune to criticism for ineffective bureaucracy. During the previously-mentioned press conference held by Mayor Carmen Yulín Cruz, she claimed that FEMA’s response to the crisis had been slow. She told the assembled media, “We are dying, and you are killing us with inefficiency and bureaucracy.”²⁰³ To prove her point, she held up several binders, claiming that they contained paperwork her staff had filled out to request FEMA assistance. In that moment, the message Mayor Cruz was conveying was that of a bureaucracy that prioritized paperwork over people. While the full details of this episode are not yet fully known, Mayor Cruz demonstrated that the public discourse can be shifted to frame an agency as process-obsessed and ambivalent about outcomes.

Cruz’s narrative is a powerful one, and one which has persisted since Plato introduced the “noble lie”—the notion that bureaucrats need to cling to myths, and not necessarily logic, to have pride in their vocation.²⁰⁴ In Cruz’s case, the myth the bureaucrats are clinging to is that substantive documentation is required to manage risk. In Cruz’s telling, the greater risk is slow relief. Franz Kafka, in his novel *The Trial*, tells of an opaque, distant, and seemingly irrational bureaucracy. During his arrest preceding the subject trial, the main character deals with two “base functionaries ... talking about things of which they don’t have the slightest understanding.... It’s only because of their stupidity that they’re able to be so sure of themselves.”²⁰⁵

²⁰² Evyn Moon, “FEMA’s Craig Fugate, on His Replacement and Hatred for Bureaucracy,” WUFT, March 23, 2017, <https://www.wuft.org/news/2017/03/23/femas-craig-fugate-on-his-replacement-and-hatred-for-bureaucracy/>.

²⁰³ Carla Herreria, “San Juan Mayor Slams Feds’ Response to Puerto Rico: ‘Get Your Ass Moving,’” *Huffington Post*, September 27, 2017, https://www.huffingtonpost.com/entry/san-juan-mayor-fema-hurricane-for-response_us_59cea7dbe4b09538b50842c2.

²⁰⁴ Catalin Partenie, “Plato’s Myths,” *The Stanford Encyclopedia of Philosophy*, June 19, 2014, <https://plato.stanford.edu/entries/plato-myths/>.

²⁰⁵ Franz Kafka, *The Trial* (Irvine, CA: Xist Publishing, 2015), 7.

In the nineteenth century, as political theorists began to think about government institutions in the rational context of the Enlightenment, Walter Bagehot wrote of Britain's "double government." He asserted that there is a part of the government that is unanswerable to the people, dividing the two parts into the "dignified" and the "efficient" institutions.²⁰⁶ The dignified institutions are there for the public political discourse, while the efficient institutions toil in the background. He notes that there are benefits to this model, but also significant risks—the efficient institutions might no longer reflect the public will. Sociologist Robert K. Merton's research lends support to this notion, observing that "Adherence to the rules, originally conceived as a means, becomes transformed into an end-in-itself; there occurs the familiar process of displacement of goals whereby 'an instrumental value becomes a terminal value.'"²⁰⁷

In reality, though, these clerks are human beings who have their own agency and, presumably, adhere to some set of values. However, that does not always mean their personal values have any influence over their professional roles. In her ethics roadmap, Paula D. Gordon cautions that "Acting in a value-based or moral way in an organization that has a pathological organizational culture can present hazards and can also pose the greatest of challenges to character and integrity."²⁰⁸ In the case of emergency management agencies, the presence of pathological organizational cultures could be due to a lack of clear direction from the political level. David Luban and others describe the essence of a Kafkaesque bureaucracy as a hierarchy where you "take away the pinnacle of the hierarchy,

²⁰⁶ Walter Bagehot, *The English Constitution*, 2nd ed. (McMaster University), accessed June 21, 2018, 210–211, <https://socialsciences.mcmaster.ca/econ/ugcm/3ll3/bagehot/constitution.pdf>.

²⁰⁷ Robert K. Merton, "Bureaucratic Structure and Personality," *Social Theory and Social Structure* (Glencoe, IL: Free Press, 1957), 195–206, http://www.sociosite.net/topics/texts/merton_bureaucratic_structure.php.

²⁰⁸ Paula D. Gordon published "The Ethics Map: A Map of the Range of Concerns Encompassed by 'Ethics and the Public Service,'" originally in 1979 as a component of her PhD dissertation, and updated it around 2003–2004. The article was never formally published, and she concedes that it "did not survive the second round of the peer review process," ascribing the rejection of her article by her peers to the influence of "value neutral scientism" in the academic discipline of public administration.

Paula D. Gordon, "The Ethics Map: A Map of the Range of Concerns Encompassed by 'Ethics and the Public Service,'" Gordon Homeland, accessed June 21, 2018, <http://gordonhomeland.com/>.

leaving only the lower orders who cannot take ultimate responsibility for anything they do.”²⁰⁹ So, can bureaucracy be good?

Max Weber argued that bureaucracy is the only way to administer an organization that relies on rational legitimacy. He asserted that “The choice is only that between bureaucracy and dilettantism in the field of administration.”²¹⁰ Berger and Luckman argue that bureaucracy does provide a certain stability, allowing for more creative, more human pursuits to occur, such as decision-making in crisis situations. These sociologists note that such routinization provides “the background of habitualized activity [which] opens up a foreground for deliberation and innovation.”²¹¹ If the bureaucracy did not exist, there is risk that a lack of technical expertise by the “dilettantes” performing government disaster response functions could be hampered by a significant learning curve. If elected leadership changed faster than lessons could be learned from the last disaster, it is unclear how such institutions would not repeat the same mistakes.

In the recursive hierarchy established by the Preamble to the U.S. Constitution, when the people cease to provide their government instrumentalities with any course corrections, the “clerks” are left to their own devices. They are the technical experts, after all. Bagehot observed that official institutions have a tendency to capture past successes as scientific proofs or as mathematical formulas. He referred to “the miscellaneous world” in order to describe a world full of non-linear, non-repeatable challenges, while contemporary researchers use the term “complexity theory.”²¹² In the context of disaster logistics, the term “hysteresis” is used, which describes an environment in which a system’s inputs do not necessarily have a direct relation to the outputs. The inability to directly translate the complexities of disaster response into an efficient process can frustrate those who must deal with Bagehot’s efficient institutions. As one independent volunteer supporting the

²⁰⁹ David Luban, Alan Strudler, and David Wasserman, “Moral Responsibility in the Age of Bureaucracy,” *Michigan Law Review* 90, no. 8 (1992): 2349, doi.org/10.2307/1289575.

²¹⁰ Max Weber, *The Theory of Social and Economic Organization* (New York: Simon and Schuster, 2009), 337.

²¹¹ Berger and Luckman, *The Social Construction of Reality*, 53.

²¹² Bagehot, *The English Constitution*; Gary M. Grobman, “Complexity Theory: A New Way to Look at Organizational Change,” *Public Administration Quarterly* 29, no. 3 (Fall 2005): 350–382.

response to Hurricane Maria in Puerto Rico told a reporter, “People think that FEMA is there to hand out bottles of water; that’s not what they do ... they’re a big machine and there’s [sic] gaps in that thing.”²¹³ In an ideal world, that machine (the bureaucracy) could take inputs (disaster needs), plug them into formulas (laws, regulations, and policies), and generate outputs (disaster assistance). This is not an ideal world, though; it is a miscellaneous world.

Bagehot cautioned that in this miscellaneous world, institutions cannot treat every operation as a science; they should be treated, instead as an art. The foundation of that art is what he described as a “vast floating vapour of knowledge float[ing] through society.”²¹⁴ In order to take advantage of this body of knowledge, he recommends bringing in an individual from the outside who has a diversity of experiences. America’s own experiment with the social contract considered this remedy. In *Federalist No. 51*, Publius (either Alexander Hamilton or James Madison) asserted that “you must first enable the government to control the governed; and in the next place oblige it to control itself.”²¹⁵ This is explicitly the design of most emergency management agencies across the country, including FEMA. The FEMA Administrator is appointed by the President of the United States, “by and with the advice and consent of the Senate,” ensuring that the political branches have a controlling interest in the agency’s work.²¹⁶

During the response to Hurricane Sandy, President Obama spoke at FEMA headquarters, where he promised Americans, “We’re going to cut through red tape. We’re not going to get bogged down with a lot of rules.”²¹⁷ As an appointee of President Obama, Craig Fugate and his fellow heads of federal agencies received an order from the pinnacle

²¹³ Matt Goldman, Kalim Armstrong, and Thomas Dexter, “A Tale of Two Puerto Ricos,” YouTube video, posted by Bloomberg, December 15, 2017, <https://www.youtube.com/watch?v=caLTF5kOra4>.

²¹⁴ Bagehot, *The English Constitution*, 157.

²¹⁵ THE FEDERALIST NO. 51, at para. 3 (Alexander Hamilton or James Madison) (Yale Law School ed., 2008), http://avalon.law.yale.edu/18th_century/fed01.asp.

²¹⁶ Post-Katrina Emergency Management Reform Act, 6 U.S.C. § 503(c), Public Law 109–295 (October 4, 2006), <https://www.congress.gov/109/plaws/publ295/PLAW-109publ295.pdf>.

²¹⁷ Barack Obama, “Remarks by the President on Hurricane Sandy,” Obama White House, October 28, 2012, <https://obamawhitehouse.archives.gov/the-press-office/2012/10/28/remarks-president-hurricane-sandy>.

of the hierarchy to seek out ends rather than means. Yet bureaucratic inertia was still a factor, and—as Bagehot first theorized and others have shown since—the protectionist interests of the machine can be antithetical to the waiving of rules or significant improvisation. Nearly three years after Sandy, one disaster survivor from Nassau County, New York, who is also a veteran of the Iraq war, told a reporter he would “rather go back to Falluja, [Iraq]” than deal with another government bureaucracy.²¹⁸ Unless the clerks are explicitly instructed by their leadership on what is and is not considered red tape, even instructions from the top are, for all practical purposes, hollow platitudes.

D. MEDIA IN THE MIDDLE

Given that the people will inevitably hold the government accountable, an understanding of how they reach an accountability judgment is required. As one team of political scientists concluded, composition of a country’s political institutions “shapes survival incentives for political leaders.”²¹⁹ In other words, precisely because they are accountable, leaders in a democracy have greater incentives to do a better job responding to disasters. Government legitimacy is closely tied to the people’s confidence in that government. In describing how public opinions are formed, and how they can influence government institutions in a democracy, German philosopher Jürgen Habermas described the concept of the public sphere, which “mediates between society and state,” and which “has made possible the democratic control of state activities.”²²⁰ America’s social contract was designed with this in mind, rooted in an idea that the press formed the underpinnings of the public sphere. The First Amendment to the U.S. Constitution guarantees freedom of the press. Initially, however, many did not consider that clause, along with much of the rest of the Bill of Rights, necessary.

²¹⁸ David W. Chen, “Hurricane Sandy’s Red Tape Makes a Veteran Say, ‘I’d Rather Go Back to Falluja,’” *New York Times*, August 18, 2015, https://www.nytimes.com/2015/08/19/nyregion/victims-of-hurricane-sandy-desperate-to-move-on-weigh-reopening-claims.html?_r=0.

²¹⁹ Alejandro Quiroz Flores and Alastair Smith, “Surviving Disasters” (essay, New York University, 2010), 37, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.461.9216&rep=rep1&type=pdf>.

²²⁰ Jürgen Habermas, “The Public Sphere: An Encyclopedia Article (1964),” *New German Critique*, no. 3 (Autumn 1974): 50, <http://www.socpol.unimi.it/docenti/barisione/documenti/File/2008-09/Habermas%20%281964%29%20-%20The%20Public%20Sphere.pdf>.

In 1787, during the debates over the proposed U.S. Constitution, one anonymous satirist wrote that if liberty of the press were not expressly granted, “we shall in the future be perfectly contented if our tongues be left us to lick the feet of our well born masters.”²²¹ This concern is echoed throughout those early debates, with proponents of the clause fearing that an aristocracy or bourgeois class could again become the intermediary between government institutions and the everyman. Today, the media largely serves the role of middleman, providing scrutiny of government activities along with civil society organizations and the public itself. Some have argued that blogs and social media have disintermediated the media from the people and their elected leaders.²²² However, as author and journalist Fareed Zakaria has written, many blogs (although this is equally applicable to all variety of social media accounts) have become guides to traditional media, and “are in fact a new Tocquevillean elite” because “the wilder, bigger, and more chaotic [the web] becomes, the more people will need help navigating it.”²²³ So, in this discussion, both traditional and social media will be described generally as “media.” In the decades following America’s founding, Alexis de Tocqueville’s observation that “provincial objects” were best handled by “provincial institutions” seems to become less pertinent as media become more pervasive and begin to reach an ever wider audience.²²⁴

In the 1920s, Walter Lippmann, an American media critic, wrote that the idea that the social contract springs from the heart of the individual—what he called, “the original dogma of democracy”—had been disproven.²²⁵ He cautioned that the “manufacture of consent,” whereby politicians and other elites leverage the media to influence opinion, was a threat to the individual’s rational self-interest. He notes, “The more obvious angels,

²²¹ John Humble, “To Lick the Feet of our Well Born Masters,” in *The Debate on the Constitution, Part One: September 1787 to February 1788*, ed. Barnard Bailyn (New York: Literary Classics of the United States, 1993), 225–226.

²²² Nilagia McCoy, “*TIME*’s Nancy Gibbs: The Disintermediation of Media and Politics,” Harvard Kennedy School Shorenstein Center on Media, Politics and Public Policy, March 1, 2016, <https://shorensteincenter.org/speaker-series-nancy-gibbs/>.

²²³ Fareed Zakaria, *The Future of Freedom: Illiberal Democracy at Home and Abroad* (New York: W.W. Norton & Company, 2003), 254.

²²⁴ Tocqueville, *Democracy in America*.

²²⁵ Walter Lippman, *Public Opinion* (New York: Harcourt, Brace and Company, 1922), 249.

demons, and kings are gone out of democratic thinking, but the need for believing that there are reserve powers of guidance persists.”²²⁶ Gone are Hobbes’s *Leviathan* and Socrates’ philosopher king telling their subjects what to think and how to think. For better or worse, the media have stepped in to fill the void.

Noam Chomsky and Edward Herman built upon Lippmann’s ideas in the 1980s, and described how prevailing power structures manufacture such consent. These elites can accomplish this, they claim, through the complicity of the media itself. They write that these institutions “carry out a system-supportive propaganda function, by reliance on market forces, internalized assumptions, and self-censorship, and without overt coercion.”²²⁷ In other words, the media is simply an unwitting extension of government propaganda. Edward Bernays, who was commissioned by the U.S. government to develop public messaging campaigns in the wake of World War I, gave credence to this concept in his 1928 book, *Propaganda*. In it, he describes the “modern propaganda”—at its most elemental level—as predicated upon human psychology and sociology. Bernays urged the intelligent and informed leadership in a democracy to leverage propaganda to “regiment and guide the masses.”²²⁸ He argued that a politician must “[create] circumstances,” “[high-spot] significant events,” and “[dramatize] important issues” in order to “focus the public mind.”²²⁹ However, both Bernays and Lippmann only seem to describe a loose affiliation between the media and government. So it becomes necessary for the politician to strike out on his own. As Lippmann notes, these imperatives to drive the narrative mean that “every leader is in some degree a propagandist.”²³⁰

By extension, the media outlets that provide that leader’s narrative (or some form of counter-narrative) to the general public become propagandists themselves. The internalized assumptions of a media organization may lead them to focus only on what is

²²⁶ Lippman, 255.

²²⁷ Edward S. Herman and Noam Chomsky, *Manufacturing Consent* (New York: Pantheon Books, 2002), 306.

²²⁸ Edward Bernays, *Propaganda* (Brooklyn, NY: Ig Publishing, 2005), 127.

²²⁹ Bernays, 128

²³⁰ Lippman, *Public Opinion*, 247.

going wrong, sensationalizing what is out of the norm. As Joseph Bessette notes, “The tendency throughout has been to view and pursue accountability as an end in itself, as an unmitigated good.”²³¹ Since the broader American public will not have the ability to empirically observe even basic facts on the ground during a disaster, the leaders they choose to listen to and the media they consume will provide an initial frame for their knowledge of events. Additional aspects of their social identity—personal philosophies, group associations, and personal experiences—will all provide additional lenses through which to view the initial frame. What Americans believe, collectively, has consequences in the voting booth and elsewhere. So while the practical realities may show a government competently administering disaster relief, the image put forward is equally—if not more—important to legitimacy. It is not enough to merely perform effectively; governments at all levels must be seen as effective by their publics. If elected leaders, appointed leaders, and career civil servants alike believe in the soundness of a policy and operational approach, they must put forward a compelling narrative that appeals to enough of the public to be permitted to carry on. If they no longer believe in that approach, they must be seen as responsive to public criticism and appropriately adapting to a new approach.

²³¹ J.M. Bessette, “Accountability: Political,” in *International Encyclopedia of the Social & Behavioral Sciences*, eds. Neil J. Smelser and Paul B. Baltes, 38–41 (Elsevier, 2001), <https://doi.org/10.1016/B0-08-043076-7/01091-3>.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. PRACTICAL EVILS

Philosophers, sociologists, and political scientists describe broad phenomena related to human activity, the ways we think, and the ways we engage with each other. The last chapter provided an overview of the *abstracta* that is moral philosophy in relation to disaster relief in the United States. Human activity, however, is governed by stricter practical realities, referred to as *concreta*, such as neuroscience, physics, geography, biology, human physiology, and economics. The interplay of these practical forces creates additional evils that are fundamental to understanding the ethical implications of disaster relief in a real-world context.

A. HOW WE DECIDE

The way the human brain works is one of the major practical impediments to a pure academic assessment of ethics in a real-world disaster. Many ethical precepts, by their very nature, assume rational actors. Doing the right thing is not always the first instinct, and instincts are not always rational. Robert Sapolsky, a neuroscientist at Stanford University, has observed that “We don’t know a ton about the neurobiology of how a moral good goes from being a frontal task to an implicit task.”²³² So, even if it is not the first instinct, we do not necessarily know why we did something, even following a longer period of reflection.

In recalling the initial response to the crash of United Airlines Flight 93 on September 11, 2001, Assistant Chief Rick King, of the Shanksville, Pennsylvania, Volunteer Fire Department, noted that “the initial shock relinquished itself to pure instinct.”²³³ Faced with an incredible situation, Chief King applied a heuristic—the use of simpler concepts to understand a difficult and novel situation. Heuristics can provide somebody relying on pure instinct with an “off-the-shelf answer,” or vignette, to frame the

²³² Lynn Levy, Tim Howard, and Amanda Aronczyk (producers), “How to be a Hero,” RadioLab, January 9, 2018, <http://www.radiolab.org/story/how-be-hero/>.

²³³ “Incident Command 9-11: Lessons Learned at the Pentagon; Shanksville, PA and Boca Raton, FL,” U.S. Fire Administration, accessed June 23, 2018, 2, https://www.usfa.fema.gov/downloads/library/transcript_sep11part2.pdf.

situation.²³⁴ These vignettes perform a useful function. In the absence of a comprehensive understanding of the situation, vignettes help speed up the decision process. Researchers of crisis decision-making have also referred to these vignettes as “mental slide carousel[s].”²³⁵ Where the emergent situation matches a known slide in the carousel, the emergency manager can immediately link the situation to a prescription for action and “knows what to do.”²³⁶ Whether he had captured these mental pictures from training or real-world experience, Chief King remembered thinking, “Commercial airliner. Two hundred to three hundred passengers.”²³⁷

This bias toward pure instinct in emergency managers is useful, since maintaining the initiative during an event requires quick and decisive action. As then-FEMA Administrator Craig Fugate noted in a 2011 White House press briefing on the federal response to Hurricane Irene, “If you wait till you know how bad it is, it becomes harder to change the outcome.”²³⁸ Fugate, a former first responder and local emergency manager, is not the first to describe decision-making in terms of instinct.²³⁹ Prussian military strategist Carl von Clausewitz called it *coup d’œil*, or “stroke of the eye,” which “refers to the quick recognition of a truth that the mind would ordinarily miss or would perceive only after long study and reflection.”²⁴⁰ Colonel John Boyd, a U.S. Air Force pilot and later a military strategist, described this as intuitive competence, or “a leader’s instinctive and intuitive sense of what is going on.”²⁴¹ Cognitive psychologist Gary Klein has noted that pure instinct, as experienced by Chief King, may not be the most precise term. Having observed

²³⁴ Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2011), 99.

²³⁵ Boin et al., *Politics of Crisis Management*, 35.

²³⁶ Boin et al., 35.

²³⁷ U.S. Fire Administration, “Incident Command 9-11,” 2.

²³⁸ “Press Briefing by Press Secretary Jay Carney and FEMA Administrator Craig Fugate,” Obama White House, August 29, 2011, White House, <https://www.whitehouse.gov/the-press-office/2011/08/29/press-briefing-press-secretary-jay-carney-and-fema-administrator-craig-f>.

²³⁹ “Biography of William Craig Fugate,” FEMA, accessed October 21, 2016, <https://www.fema.gov/william-craig-fugate>.

²⁴⁰ Carl von Clausewitz, *On War*, translated by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1993), 102.

²⁴¹ Robert Coram, *Boyd: The Fighter Pilot Who Changed the Art of War* (New York: Back Bay Books/Little, Brown, 2004), 334.

firefighters for years as part of his research, he noticed that they rely not only on a mental image of a past fire, but they also conduct rapid analysis in their head—or “mental simulation.” He further expands on this by stating that “The pattern matching is the intuitive part, and the mental simulation is the conscious, deliberate, and analytical part,” or “recognition-primed decision-making.”²⁴²

There is a distinction between experiential learning (pure instinct) and cognitive engagement. Psychologist Daniel Kahneman has described these two concepts of thinking as System 1 and System 2. For purposes of his narrative, Kahneman characterizes them “as agents with their individual abilities, limitations, and functions.”²⁴³ System 1 is fast and unconscious (the low road), whereas System 2 is slower and deliberate (the high road). The emotional and instinctive low road has provided humans with an evolutionary advantage in the face of danger, while higher-order cognition has enabled the critical thinking that makes us human. Neuroscientist Joseph LeDoux describes Kahneman’s two systems as two pathways—System 1 moves through the sensory, or thalamic, system straight to the amygdala, while System 2 must move through the cortex. So it turns out that the low road is the more direct route, while the high road requires a detour. In LeDoux’s words, “The information received from the thalamus is unfiltered and biased toward evoking responses. The cortex’s job is to prevent the inappropriate response rather than to produce the appropriate one.”²⁴⁴ LeDoux notes that, “from the point of view of survival, it is better to respond to potentially dangerous events as if they were in fact the real thing than to fail to respond.”²⁴⁵ This is consistent with Fugate’s imperative to respond to a disaster without complete information.

There exists a threshold in every emergency manager’s operating environment after which instincts alone are no longer sufficient. As Kahneman notes, intuitive competence, without the aid of algorithms or information external to a decision-maker’s brain, fails us

²⁴² Gary Klein, “Naturalistic Decision Making,” *Human Factors* 50, no. 3 (June 2008): 456–460, doi.org/10.1518/001872008X288385.

²⁴³ Kahneman, *Thinking, Fast and Slow*, 21.

²⁴⁴ Joseph E. LeDoux, *The Emotional Brain: The Mysterious Underpinnings of Emotional Life* (New York: Simon & Schuster, 1996), 165.

²⁴⁵ LeDoux, 165.

in certain environments—what he terms “low-validity” or “zero-validity” environments. He finds that intuitive competence is valid “in an environment that is sufficiently regular to be predictable” and where there is “an opportunity to learn these regularities through prolonged practice.”²⁴⁶ This idea is familiar to emergency managers when transitioning from single-resource or initial-action incidents, with a single incident commander, to an expanding incident under unified command. The scale and scope of the response organization’s authorities and resources must grow to match the complexity of the threat or hazard.²⁴⁷ In such cases, System 2 is not simply performing mental simulation, it is also performing “deliberate checking and search” which must, necessarily, happen outside of a single individual’s brain.²⁴⁸ It is in these non-linear, non-repeatable events where models could be most useful, and where Kahneman notes, “final decisions should be left to formulas.”²⁴⁹

However, people are not willing to make decisions based on information they do not trust. As a report on the use of data during humanitarian crises from the United Kingdom Department for International Development noted, “Even when good data is available, it is not always used to inform decisions.”²⁵⁰ This is supported by historical disaster experience, where responders and decision-makers were wise to be skeptical. In the aftermath of the 2010 Haiti earthquake, data quality issues were blamed for a stove-piped U.S. government response. A United States Agency for International Development–funded evaluation of that response noted that, “Since there was no single reliable data source, U.S. government agencies ‘pushed’ resources into Haiti in order to meet the

²⁴⁶ Kahneman, *Thinking, Fast and Slow*, 240.

²⁴⁷ “ICS-300–Intermediate ICS for Expanding Incidents,” Emergency Management Institute, October 2013, 2.12, https://www.in.gov/dhs/files/ICS_300_SM.pdf.

²⁴⁸ Kahneman, *Thinking, Fast and Slow*, 46.

²⁴⁹ Kahneman, 225.

²⁵⁰ Department for International Development, *Promoting Innovation and Evidence-Based Approaches to Building Resilience and Responding to Humanitarian Crises: A DFID Strategy Paper* (London, Department for International Development, 2012), 32, <http://reliefweb.int/sites/reliefweb.int/files/resources/prom-innov-evi-bas-appr-build-res-resp-hum-cris.pdf>.

unidentified needs in the field.”²⁵¹ Hurricane Katrina in 2005 shows that even when there are recognized authorities with quality information, inexperience, lack of trust, or other economic and political considerations can skew a leader’s decisions. In an interview with a local New Orleans newspaper less than a week after Katrina’s landfall, Max Mayfield, then the director of the National Hurricane Center, commented that, “We were briefing [officials] way before landfall. It’s not like this was a surprise. We had in the advisories that the levee could be topped. I keep looking back to see if there was anything else we could have done, and I just don’t know what it could be.”²⁵² David L. Johnson, then the director of the National Weather Service, later testified before Congress that “forecasts of where Katrina would go were more accurate than usual, with all of the forecast tracks during the last 48 hours lining up almost directly on top of the actual track.”²⁵³ The Democratic Staff of the U.S. House of Representatives Committee on Science asked rhetorically, “What good will it do us if our leaders ignore the information?”²⁵⁴

This should be especially concerning given the psychological and statistical research regarding humans’ inability to be very good predictors in complex environments. In 1954, Paul F. Meehl found that actuarial approaches (models) were superior to a clinician’s judgment.²⁵⁵ Robyn M. Dawes later built upon Meehl’s work, noting that “even improper linear models” were superior to the judgments of experts.²⁵⁶ Kahneman explains

²⁵¹ Debarati Guha-Sapir et al., *Independent Review of the U.S. Government Response to the Haiti Earthquake: Final Report* (Washington, DC: USAID, March 2011), http://pdf.usaid.gov/pdf_docs/pdacr222.pdf.

²⁵² Mark Schleifstein, “FEMA Knew of Storm’s Potential, Mayfield Says,” *New Orleans Times-Picayune*, September 4, 2005, http://www.nola.com/katrina/index.ssf/2005/09/fema_knew_storms_potential_mayfield_says.html.

²⁵³ *Hearing before the U.S. House of Representatives Committee on Science*, 109 Cong. 1 (written testimony of Brigadier General David L. Johnson [USAF, Ret.], Director of the National Weather Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce) (October 7, 2005), 2, <http://www.legislative.noaa.gov/Testimony/johnsonfinal100705.pdf>.

²⁵⁴ U.S. House Committee on Science (Democratic Staff), *A Failure to Protect and Defend: The Federal Emergency Response to Hurricane Katrina*, version 1.0a (October 20, 2005), 3–4, <https://www.hsdl.org/?view&did=463753>.

²⁵⁵ Paul E. Meehl, *Clinical versus Statistical Prediction: A Theoretical Analysis and a Review of the Evidence* (Minneapolis: University of Minnesota Press, 1954), 149, <http://dx.doi.org/10.1037/11281-010>.

²⁵⁶ Robyn M. Dawes, “The Robust Beauty of Improper Linear Models in Decision Making,” *American Psychologist* 34 (1979): 571–582, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.188.5825&rep=rep1&type=pdf>.

the psychological basis for this as humans harboring “a deep resistance to the demystification of expertise.” Adam Smith and Karl Marx, while harboring deeply dissonant views on the political economy, both agreed that medieval guilds’ creation of privileges to become the master of a craft handicapped the progress and efficiency of the economy. Explaining the psychology behind this, Kahneman notes that this view is not just held by experts who derive value from holding esoteric knowledge, but also by most people, because “People have a strong preference for the natural over the synthetic or artificial ... the difference in emotional intensity is readily translated into a moral preference.”²⁵⁷ So, while many schools of ethics are grounded in reason, the vessel of those principles—the human brain—is much less reliable. The ability to distinguish fact from feeling is not preordained.

B. THE SCIENCE OF SCARCITY

The material means of achieving ends are limited. We have been turned out of Paradise. We have neither eternal life nor unlimited means of gratification. Everywhere we turn, if we choose one thing we must relinquish others which, in different circumstances, we wish not to have relinquished. Scarcity of means to satisfy ends of varying importance is an almost ubiquitous condition of human behavior.

—Lord Lionel Robbins²⁵⁸

In 1932, Lord Lionel Robbins defined economics as “the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.”²⁵⁹ In 1970, Heinz Köhler shortened this definition to, simply, “the science of scarcity.”²⁶⁰ Robbins advocated for economic analysis as a science, arguing that the complexities of the exchange economy require a high level of abstraction to weigh the costs and benefits of their decisions, noting that their implications “reach beyond the

²⁵⁷ Kahneman, *Thinking, Fast and Slow*, 228.

²⁵⁸ Robbins, *Nature and Significance of Economic Science*, 14–15.

²⁵⁹ Robbins, 15.

²⁶⁰ Heinz Köhler, *Economics: The Science of Scarcity* (Oak Brook, IL: Dryden Press, 1970).

repercussions on the individual.”²⁶¹ The non-disaster economy, in spite of its complexities, deals with relative scarcity of resources, governed by supply and demand. Abundance of resources is not a characteristic of a catastrophic disaster. So while scarcity is already a feature of the normal economy, it can be exacerbated by disaster. Information problems prohibit the fairest allocation of resources, while allocation itself is fraught with both ethical and practical concerns.

1. Information Problems

Just as trust is critical in the study of human psychology and neuroscience, it is also important in economics. Economist George Akerlof describes a state in which different actors in an economy have an imbalance of knowledge about the same transaction, what he refers to as “an asymmetry in available information.”²⁶² Akerlof focused on “adverse selection” in automobile sales, for which the seller has more information about the quality of the vehicles being sold and the buyer becomes stuck with a lemon due to his or her relative lack of data. In disasters, adverse selection is not just present in the traditional power dynamic of buyer-seller. The unique characteristics of the contingency supply chain lead to both parties in a transaction becoming vulnerable to adverse selection, which is a unique category I will refer to as the “double-blind,” as in medical experiments. While the double-blind is used as a method to reduce bias in experiments, the practical implications of the double-blind are that it can sow distrust, and lead to inefficient or ineffective decisions. Psychologists Joseph Luft and Harry Inghram introduced a similar concept with their “Johari window,” which describes an “area of unknown activity” in interpersonal relations where neither the self nor others have awareness of a problem.²⁶³ This concept

²⁶¹ Robbins, *Nature and Significance of Economic Science*, 18.

²⁶² George Akerlof, “The Market for Lemons,” *Quarterly Journal of Economics* 84, no. 3 (1970): 489.

²⁶³ Joseph Luft, “The Johari Window: A Graphic Model of Awareness in Interpersonal Relations,” *Human Relations Training News* 5, no. 1 (1961): 6.

was most succinctly described by former Secretary of Defense Donald Rumsfeld in his now-famous “known unknowns” discursion.²⁶⁴

Another information problem, moral hazard, occurs when one party attempts to game the system in order to reduce their risk. The provision of social backstops, like insurance or disaster relief, can actually increase overall risk. As discussed earlier, the National Flood Insurance Program is argued to incentivize such behavior. With the government serving as a financial backstop to homeowners living in floodplains, risk is shifted from the individual to the government, and ultimately, all other taxpayers. Business professor David Moss has written that moral hazard is “an almost inevitable byproduct of risk shifting, tempting even the most virtuous of citizens.”²⁶⁵ If too many people attempt to game the system, risk is not equitably distributed, and the burden on the government to provide aid becomes increasingly impractical.

Italian economist Vilfredo Pareto is credited with moving the study of economics “from a branch of moral philosophy as practised by Adam Smith into a data intensive field of scientific research and mathematical equations.”²⁶⁶ One of Pareto’s contributions to the field is the concept of Pareto-optimality, a measure of efficiency which describes a balanced state where resources are optimally allocated. If an individual tries to improve his or her situation, it is likely to impact another individual negatively. This ideal state of allocation echoes John Stuart Mill’s Greatest Happiness Principle, in which the greatest good of the greatest number is held up as the ultimate end. American economist Ronald Coase theorized that if you can minimize transaction costs to zero, initial allocation can be

²⁶⁴ “As we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—the ones we don’t know we don’t know. And if one looks throughout the history of our country and other free countries, it is the latter category that tend to be the difficult ones.” In Donald L. Rumsfeld, “DoD News Briefing—Secretary Rumsfeld and Gen. Myers,” DoD, February 12, 2002, <http://archive.defense.gov/Transcripts/Transcript.aspx?TranscriptID=2636>.

²⁶⁵ Moss, *When All Else Fails*, 37.

²⁶⁶ Benoit Mandelbrot and Richard L. Hudson, *The (Mis)behavior of Markets: A Fractal View of Risk, Ruin, and Reward* (New York: Basic Books, 2004), 153.

made Pareto-optimal if parties are willing to bargain. However, contrary to Adam Smith's "invisible hand," Coase observes that there is a "cost of using the price mechanism."²⁶⁷

University of Chicago Professor of Behavioral Science and Economics Richard Thaler offers a refinement to the theories of Pareto and Coase. He asserts that behavior science tells us that initial allocation makes parties who felt they were treated unfairly not want to bargain. This is the primary practical impediment to proving Coase's theorem in the real world. Thaler describes "the underweighting of opportunity costs" as the "endowment effect."²⁶⁸ That is, when making decisions under risk, individuals care less about what they could have gained in a transaction and more about what they could lose. As Kahneman and Tversky likewise assert in their prospect theory, "People are expected to exhibit more risk seeking in deciding whether to accept a fair gamble than in deciding whether to purchase a gamble for a fair price."²⁶⁹ Humans are psychologically concerned about what they started with in a transaction, and have an aversion to losing. In behavioral economics, it does not matter if both transactions lead to the same outcome. Whether something is framed as a loss or a gain is the relevant aspect of human behavior that determines an individual's satisfaction with any transaction.

2. Trade-Offs

In a disaster, scarcity is a given. This means that the system is inherently Pareto-inefficient. Every affected individual's needs are not being met, to one degree or another. So, the question becomes how we adjudicate a limited set of resources. Former White House economic advisor Gregory Mankiw's first principle of economic decision-making is that "people face trade-offs."²⁷⁰ If decisions under risk are vulnerable to our brain chemistry and the practical impossibility of having all of the facts, then trade-offs include

²⁶⁷ Ronald H. Coase, "The Nature of the Firm," *Economica* 4, no. 16 (November 1937): 390.

²⁶⁸ Richard Thaler, "Toward a Positive Theory of Consumer Choice," *Journal of Economic Behavior & Organization* 1, no. 1 (1980): 44.

²⁶⁹ Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk," *Econometrica* 47, no. 2 (1979): 288, doi.org/10.2307/1914185.

²⁷⁰ N. Gregory Mankiw, *Principles of Microeconomics*, vol. 10 (Boston: Cengage Learning, 2006).

much more than simplified supply-and-demand equations. John Hamer has proposed three responses to scarcity: substitution, rationing, and stockpiling.²⁷¹

a. Substitution

In response to the loss of the normal supply chain, and the typical ways and means by which individuals obtain food and water, the disaster supply chain temporarily substitutes the commercial supply chain. This is done in order to provide adequate sustenance as a bridging function until the normal supply chain is restored. Commercial supply chains, in the absence of a disaster, operate at or near the margins. In these systems, efficiency and cost-savings are stressed at the expense of resiliency. Various researchers have attempted to optimize or streamline the disaster logistics supply chain, but demand is rarely known; and, due to its temporary and reactive nature, it does not improve with experience. As one researcher observed, “models based on the commercial logistic paradigm may not work because they cannot capture the full complexity of the deprivation costs (e.g., non-additive demands, non-linearity, hysteresis).”²⁷²

b. Rationing and Allocation

Common priorities are necessary to ensure a unified approach to disaster response operations. Priorities do not necessarily matter when there is an abundance of resources. FEMA guidance to the broader domestic disaster response community uniformly stresses the importance of prioritization and allocation of resources. The adage “If everything is a priority, then nothing is a priority” is echoed by the authors of these documents, but they only briefly describe some potential methods to accomplish prioritization or allocation. None of these documents asserts a common approach to prioritization. In the context of long-term disaster recovery, FEMA has promulgated guidance which recommends consideration of several key factors when identifying priorities. These include items that

²⁷¹ John Hamer, “Economics of Scarcity,” in *Editorial Research Reports 1973*, vol. II, 821–40 (Washington, DC: CQ Press, 1973), <http://library.cqpress.com/cqresearcher/cqresrre1973102600>.

²⁷² José Holguín-Veras et al., “On the Appropriate Objective Function for Post-disaster Humanitarian Logistics Models,” *Journal of Operations Management* 31, no. 5 (2013): 262–280, doi.org/10.1016/j.jom.2013.06.002.

are commonly found in operational doctrine and guidance, such as senior leaders' objectives, authorities, resource availability, and the consequences of the incident. Notably, this list also includes "the unique cultural characteristics and expectations of the jurisdiction."²⁷³

Donald Light and David Hughes argue, for example, that the "social construction of rationing" has reframed healthcare resource allocation increasingly in economic terms. They argue that the idea of fixing priorities so that they are more "transparent and participatory" (in line with the social contract) may sound appealing in theory, but has, in practical terms, resulted in "an ongoing power struggle in which politicians, policy makers, managers, clinicians and analysts try to justify or challenge allocative decisions."²⁷⁴ They also list three practical issues that make rationing ethically perilous: (1) It is not easy to break down resources discretely enough in order to efficiently allocate based on need; (2) those who end up not receiving resources "can make as plausible a claim as those who receive them"; and (3) "principles of fair distribution do not allow one to choose among claimants."²⁷⁵ The first issue is best illustrated through the example of a trailer-load of bottled water. Offloading the truck in order to access specific pallets and redistributing them elsewhere is inherently inefficient. Unsealing the pallet and breaking the packaging on the case to grab a bottle or two makes the entire pallet more difficult to transport. The second issue is covered in the next sub-chapter on the tyranny of distance. Finally, the third issue speaks to the heart of the social contract and ethical approaches to justice and fairness.

c. Stockpiling

In addition to stockpiling commodities for disaster relief, the federal government uses stockpiling across a range of economic sectors to guard against the effects of shocks and other disruptions. The Secretary of Health and Human Services is required by law to

²⁷³ FEMA, *Effective Coordination of Recovery Resources for State, Tribal, Territorial and Local Incidents* (Washington, DC: Department of Homeland Security, 2015), 16, <https://www.fema.gov/media-library/assets/documents/101940>.

²⁷⁴ Donald W. Light and David Hughes, "Introduction: A Sociological Perspective on Rationing: Power, Rhetoric and Situated Practices," *Sociology of Health & Illness* 23, no. 5 (2001): 561.

²⁷⁵ Light and Hughes, 563.

maintain the Strategic National Stockpile “to provide for the emergency health security of the United States.”²⁷⁶ Vaccines, medical supplies, and medical countermeasures are readied for any naturally occurring or manmade public health threat—from the seasonal flu to an anthrax attack. The Secretary of Energy is required by law to maintain the Strategic Petroleum Reserve for “the storage of up to 1 billion barrels of petroleum product” in order to avoid a rise in gas prices similar to the “oil shocks” of the 1970s.²⁷⁷ The Department of Defense’s (DoD’s) authorities include the requirement to stockpile “strategic and critical materials” to meet the nation’s needs “during a national emergency,” and which “are not found or produced in the United States in sufficient quantities to meet such need.”²⁷⁸ Is stockpiling an efficient or effective solution to mitigate supply disruptions?

The belief that the federal government will stockpile enough for every citizen in his or her time of need is ethically perilous. That supposition can have an impact on individual, community, and state preparedness. In addition to not having the recommended 72 hours’ worth of food and water stockpiled, of those that rent their home, nearly two-thirds have less than \$400 cash available to them.²⁷⁹ So stockpiling or buying supplies when faced with the threat of disaster becomes unnecessarily burdensome.

Furthermore, most states do not stockpile their own meals or water, and rely on FEMA, the American Red Cross, or other voluntary agencies to fulfill requests during disaster responses. The *2017 National Preparedness Report*, published by the U.S. Department of Homeland Security, with input from every state, territory, and the District of Columbia, notes that only 34 percent (or 19 out of 56) rated themselves as “proficient” in the core capability of “logistics and supply chain management,” with the report noting

²⁷⁶ Strategic National Stockpile and Security Countermeasure Procurements, 42 U.S.C. § 247d–6b.

²⁷⁷ Strategic Petroleum Reserve, 42 U.S.C. § 6234.

²⁷⁸ Legal Information Institute, 50 U.S.C. § 98.

²⁷⁹ “American Families Face a Growing Rent Burden,” Pew Charitable Trusts, April 19, 2018, <http://www.pewtrusts.org/en/research-and-analysis/reports/2018/04/american-families-face-a-growing-rent-burden>.

this key metric as a decline from the previous year.²⁸⁰ Florida is one of the few states with its own commodities stockpile—the State Logistics Response Center (SLRC), centrally located in Orlando. The primary purpose of the SLRC is “to store approximately one to one and a half days [sic] supply of water and other commodities to assist the citizens of the State to recover from an emergency event.”²⁸¹ By giving the federal government a head start on moving its own water and meals, Florida has accepted some level of responsibility for stockpiling.

Similarly, many religious organizations, as a component of their faith, recognize the virtues of stockpiling for disaster. The Church of Jesus Christ of Latter-Day Saints (the Mormon Church) maintains a complex logistics and supply chain capability, with its center of gravity at the Bishops’ Central Storehouse outside Salt Lake City, Utah. The primary mission of the central storehouse, its vertically integrated Deseret Trucking company, and the hundreds of bishops’ storehouses throughout the United States, is to provide “food and sundry items” as part of the Church’s internal welfare system. In addition, the Church also dispatches emergency equipment and supplies “to areas of the world where people have suffered the effects of natural disasters like Hurricane Katrina.”²⁸² The Southern Baptist Convention is also well known in the disaster relief community for its mobile feeding kitchen mission, which, during the response to Hurricane Irene in 2011, the president of the American Red Cross said “[could] serve 250,000 meals a day initially ... up to a million meals a day if necessary.”²⁸³ While this capability seems impressive, a 2008 Government Accountability Office (GAO) report on voluntary organizations’ role in post-disaster provision of mass care services found that, while the capability was indeed “substantial,”

²⁸⁰ Department of Homeland Security, *2017 National Preparedness Report* (Washington, DC: DHS, October 2017), 60, <https://www.fema.gov/national-preparedness-report>.

²⁸¹ “Annex 11 to the State Logistics Plan, State Logistics Response Center Operations Protocols,” Florida Division of Emergency Management, September 8, 2016, <http://www.floridadisaster.org/Response/Logistics/documents/State%20Logistics%20Plan%20-%20Annex%2011-%20SLRC%20Operations%20Protocols%20Revised%202016.pdf>.

²⁸² “New Bishops’ Central Storehouse Ready to Serve the Needy,” Mormon Newsroom, January 27, 2012, <http://www.mormonnewsroom.org/article/new-bishops-central-storehouse-serve>.

²⁸³ “Hurricane Irene Press Conference,” FEMA, August 26, 2011, <https://www.fema.gov/media-library-data/20130919-0849-5011-0063/transcripts20130919-5011-bacjf3.txt>.

these organizations “would likely fall short of estimated needs in a worst-case large-scale disaster without government and other assistance.”²⁸⁴

C. THE TYRANNY OF DISTANCE

Amateurs study strategy, professionals study logistics.

—attributed to General Omar T. Bradley, U.S. Army²⁸⁵

It is useful to understand the economic and philosophical rationales for providing food and water to disaster survivors, but those resources must eventually get to where they are needed. While the individual or community most in need may have the greatest claim on a specific resource, the provider (whether it is the state or federal government or a nongovernmental organization) still has to do the practical work (procurement, transportation, and provision) to deliver that capability. Military theorists and strategists have termed this “power projection” or “force projection.”²⁸⁶ The higher the expectations we have for our nation’s “relief projection,” the more impractical it becomes to meet the needs of all those with claims.

Geographer William Bunge wrote in 1961 that the most significant predictors of interaction between two spatial locations are distance, nearness, and geometry, what he referred to as the “tyranny of distance.”²⁸⁷ To overcome these impediments in normal times, the economy has constructed supply chains. A supply chain has been described by researchers as “a network of materials, information, and services processing links with the

²⁸⁴ *Mass Care in Disasters: FEMA Should Update the Red Cross Role in Catastrophic Events and more Fully Assess Voluntary Organizations’ Mass Care Capabilities*, testimony before the House of Representatives Subcommittee on Economic Development, Public Buildings, and Emergency Management, Committee on Transportation and Infrastructure (statement of Cynthia M. Fagnoni, Managing Director, Education, Workforce, and Income Security Issues) (September 23, 2008), 41, <https://www.gao.gov/assets/130/121246.pdf>.

²⁸⁵ Quoted in Terry C. Pierce, “Voodoo Logistics Sink Triphibious Warfare,” *Proceedings Magazine* 122, no. 9/1 (September 1996): 123, <https://www.usni.org/magazines/proceedings/1996-09/voodoo-logistics-sink-triphibious-warfare>.

²⁸⁶ Joint Chiefs of Staff, *DOD Dictionary of Military and Associated Terms* (Washington, DC: Joint Chiefs of Staff, 2018), 90, 146, <http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/dictionary.pdf>.

²⁸⁷ William Bunge, “The Structure of Contemporary American Geographic Research,” *The Professional Geographer* 13, no. 3 (1961), 19–23.

characteristics of supply, transformation, and demand.”²⁸⁸ The DoD simply describes it as “providing materiel from a raw materiel stage to an end user as a finished product.”²⁸⁹ The normal supply chain takes (usually distant) food from farms (or water from wells), packages it, and ships it to stores where customers buy their meals and water to meet their individual needs. As previously described, the failure of the normal supply chain necessitates the establishment of a contingency supply chain. This section describes how the various activities of that supply chain interrelate, as well as the practical issues inherent following a disaster.

1. Catastrophic Sourcing

As part of the social contract to provide disaster relief, it often falls upon the government (at both the state and federal level) to provide water and meals. Given their initial responsibility for disaster relief, state governments are expected to explore options for feeding and hydration within the state before seeking federal assistance. As noted previously, there are some states and nonprofits that stockpile a significant amount of commodities in preparation for disaster. For those that do not, however, the U.S. Department of Agriculture’s (USDA’s) Food and Nutrition Service (FNS) allows for the use of school lunch stockpiles during both presidentially declared disasters under the Stafford Act or “situations of distress” falling short of a declaration for up to thirty days without written approval from the FNS.²⁹⁰ The state of Washington explicitly states in its emergency plans that “The state does not stockpile food or water for emergencies,” although it recognizes both the FNS’s and Salvation Army’s capability to meet initial needs.²⁹¹ In Oregon, the state’s emergency plans assign responsibility to the Oregon Department of Education for distribution of “food from the State warehouse or local

²⁸⁸ Injazz J. Chen and Antony Paulraj, “Towards a Theory of Supply Chain Management: The Constructs and Measurements,” *Journal of Operations Management* 22, no. 2 (2004): 119–150, doi.org/10.1016/j.jom.2003.12.00.

²⁸⁹ Joint Chiefs of Staff, *DOD Dictionary*, 221.

²⁹⁰ Situations of Distress, 7 C.F.R. § 250.70.

²⁹¹ “ESF 6: Mass Care, Emergency Assistance, Temporary Housing, and Human Services,” Washington Military Department, August 2016, <https://mil.wa.gov/uploads/pdf/PLANS/wa-esf6-mass-care-final-aug2016.pdf>.

agencies,” which draws upon FNS commodities.²⁹² One of the limitations to this solution, however, is that many of these foodstuffs require cooking, or at least heating, prior to consumption. So while this would work for locations with the ability to cook meals (like congregate care shelters or feeding kitchens), some of the hardest-hit survivors will be unable to benefit.

FEMA’s initial inventory of meals is based on the planning factors outlined in the agency’s maximum-of-maximums planning scenario. This is intended to drive whole-of-nation preparedness for what has been referred to as a doomsday scenario.²⁹³ In the parlance of bureaucracy, these public statements have been reduced to what FEMA now refers to—unofficially, still—as the “meta-scenario.” The meta-scenario is defined as follows:

A no-notice event [that impacts] a population of seven million within a 25 thousand square mile area. The impacted area includes several states across multiple regions. Severe damage is projected to critical infrastructure including essential transportation infrastructure. Ingress and egress options are severely limited. The projected number of fatalities is 195,000 during the initial hours of the event. It is projected that 265,000 survivors will require emergency medical attention. At least 25 percent of the impacted population will require mass care, emergency sheltering, and housing assistance.²⁹⁴

This means that at least 1.75 million individuals would require mass care support, to include water and meals, until the situation is stabilized. The agency also wants to ensure feeding support for the entire impacted population of seven million. One request for information (RFI) to industry in 2011 sought to “identify sources of supply” for 14 million meals per day over a ten-day period—140 million meals.²⁹⁵ FEMA supplies meals through

²⁹² “ESF 6—Mass Care,” Oregon Office of Emergency Management, February 3, 2015, http://www.oregon.gov/oem/Documents/2015_OR_EOP_ESF_06_mass_care.pdf.

²⁹³ David A. Graham, “The Mothers of All Disasters,” *The Atlantic*, September 2, 2015, <http://www.theatlantic.com/national/archive/2015/09/the-disaster-next-time/403063/>.

²⁹⁴ Jared T. Brown, *Deployable Federal Assets Supporting Domestic Disaster Response Operations: Summary and Considerations for Congress* (Washington, DC: Congressional Research Service), 6.

²⁹⁵ “RFI for Pre-packaged Commercial Meals,” Federal Business Opportunities, January 27, 2011, https://www.fbo.gov/index?s=opportunity&mode=form&id=eaea338540a0aea155a48a650a077352&tab=core&_cview=0.

a combination of reduced-sodium meals, just-in-time contracts, and short shelf-life meals provided by the Defense Logistics Agency. When fully stocked, FEMA's nationwide network of distribution centers typically stockpiles less than ten million meals. The American Red Cross, one of FEMA's logistics partners, adds up an additional two million meals, while the Defense Logistics Agency is mandated to keep five million Meals, Ready-to-Eat (MREs) in its war reserve inventory, with 3.1 million available for government purposes, and not specifically allocated to the armed services.²⁹⁶

a. Contracting Out

When FEMA's distribution centers run out of food and water, the strategy outlined by the federal government to source additional commodities is to contract with the private sector (which is where the 2011 RFI comes in). While there is an inherent lag in obtaining outside services, contracts with private-sector firms take advantage of market specialization, which—in theory, at least—generates greater efficiencies. However, some researchers caution that “One should avoid the knee-jerk reaction that claims that contracting out will always prove more efficient and more effective than [public-sector] services.”²⁹⁷

As an example, in 2017, following the devastating impacts of Hurricanes Harvey, Irma, and Maria, FEMA issued a solicitation to private industry to provide meals.²⁹⁸ In addition to specifications on nutrition, packaging, and transportation considerations, the solicitation also noted that FEMA would not accept “any meals that need to be heated by microwave or external heat (i.e., boiled water).”²⁹⁹ In a disaster-stricken area, it is very likely that the survivors are also without power. What are the ethical implications of

²⁹⁶ “MRE Study Fact Sheet,” Defense Logistics Agency, accessed June 23, 2018, http://www.dla.mil/Portals/104/Images/J3LogisticOperations/J3_MRE_151008.pdf.

²⁹⁷ Jonas Prager and Swati Desai, “Privatizing Local Government Operations: Lessons from Federal Contracting out Methodology, *Public Productivity & Management Review* (1996): 185–203.

²⁹⁸ “FEMA Seeks Contractors to Provide Meals in Wake of Hurricane Maria Will Begin Awarding Contracts ASAP,” Markets Insider, September 19, 2017, <http://markets.businessinsider.com/news/stocks/FEMA-Seeks-Contractors-to-Provide-Meals-in-Wake-of-Hurricane-MariaWill-Begin-Awarding-Contracts-ASAP-1002384581>

²⁹⁹ Markets Insider.

providing a meal that needs to be microwaved to people who are unable to operate their microwaves? These are issues that are usually resolved prior to a disaster, but not always.

In one case, during the response to Hurricane Maria, FEMA awarded a contract to a one-person firm to provide 30 million self-heating meals over the course of twenty days. The contractor was unable to deliver more than 50,000 meals—all of which shipped separately from their heating elements—before FEMA cancelled the contract. In her email terminating the company, the federal contracting officer wrote, “This is a logistical nightmare.”³⁰⁰ The *Washington Post* editorial board excoriated FEMA’s “ineptitude” and asserted, “Surely there should be better planning in lining up potential contractors capable of doing the work when disaster hits.”³⁰¹ FEMA Administrator Brock Long countered that “One canceled contract did not prevent anyone from receiving food.”³⁰² While there were certainly “thousands of efforts”—both governmental and nongovernmental—to provide food and water to Puerto Rico, this saga raises critical questions about how the government conducts due diligence on contractor capabilities and their ability to deliver as promised. The primary ethical issue with a contractor here is a dissonance in values. While the contractor is commissioned, in a sense, by the government, it remains an independent actor with a profit motive. While the government retains some measure of leverage over the contractor, panoptic oversight is impossible.

Other practical issues that arise include the way in which response organizations deal with contracting officers in the federal government. Contracting officers have voluminous rules, regulations, and processes that action-oriented emergency management leaders often find maddening (like Craig Fugate’s hatred of clerks). The GAO has found that contracting officers are typically at the mercy of two masters: on the one hand, they

³⁰⁰ Patricia Mazzei and Agustin Armendariz, “FEMA Contract Called for 30 Million Meals for Puerto Ricans. 50,000 Were Delivered,” *New York Times*, February 6, 2018, <https://www.nytimes.com/2018/02/06/us/fema-contract-puerto-rico.html>.

³⁰¹ “Puerto Rico Needed Meals. FEMA Let the Island Down,” *Washington Post*, February 9, 2018, https://www.washingtonpost.com/opinions/puerto-rico-needed-meals-fema-let-the-island-down/2018/02/09/321e9878-0c49-11e8-95a5-c396801049ef_story.html?utm_term=.ecb22dcf06f9.

³⁰² Brock Long, “Once Canceled Contract Doesn’t Define FEMA’s Effort in Puerto Rico,” *Washington Post*, February 15, 2018, https://www.washingtonpost.com/opinions/one-canceled-contract-doesnt-define-femas-effort-in-puerto-rico/2018/02/15/2c0891b2-11dc-11e8-a68c-e9374188170e_story.html?utm_term=.99b3c9c9fb9c.

must focus on following applicable policies handed down by higher contracting authorities, and on the other, a focus on reporting to local supervisors with relatively shallow knowledge of the ins and outs of contracting, which “gives contracting officers less standing to resist requests.”³⁰³ This arrangement allows these supervisors “to exert pressure on contracting officers that may not result in the best use of taxpayer dollars.”³⁰⁴ Project management best practices describe an “iron triangle,” which is the trade-off between time, cost, and quality in completing a project.³⁰⁵ A preference for one is necessarily at the expense of one or both of the others. In a disaster, if timeliness is the priority, costs will likely rise and quality is likely to decrease.

b. War Mobilization Authorities in Support of Disaster Relief

The U.S. federal government has the ability to mobilize private industry in times of national emergency through the Defense Production Act. Originally developed as an arrow in America’s quiver of Cold War–era civil defense mobilization authorities, this authority is largely used today by the DoD to speed the development of weapons systems and other war materiel. The potential public safety benefits of the authority are vast, but it remains an often overlooked and underutilized capability by federal civilian agencies.

As authorized by the Defense Production Act, and further directed by Executive Order 13603, the Agriculture Priorities and Allocation System allows for the prioritization or reallocation of the productive capacity of private industry to specific purposes. USDA is assigned as the “resource department” for food resources (including bottled water), giving it portfolio jurisdiction over an industry for which it is best suited to conduct analysis. USDA is responsible for conducting due diligence on the food resources industry in order to avoid any unintended consequences from federal allocation or prioritization

³⁰³ Government Accountability Office (GAO), *Disaster Contracting: FEMA Needs to Cohesively Manage its Workforce and Fully Address Post-Katrina Reforms*, GAO-15-783 (Washington, DC: GAO, 2015), 23, <http://www.gao.gov/assets/680/672771.pdf>.

³⁰⁴ GAO, 23.

³⁰⁵ Andrea Caccamese and Damiano Bragantini, “Beyond the Iron Triangle: Year Zero,” paper presented at the 2012 PMI Global Congress, Marsailles, France, <https://www.pmi.org/learning/library/beyond-iron-triangle-year-zero-6381>.

decisions.³⁰⁶ One of those unintended consequences could be the unfair distribution of burden on one member of industry. As the USDA fact sheet on the Agriculture Priorities and Allocation System notes, “Allocation orders would be distributed equitably among the suppliers of the resource(s) being allocated and would not require any person to relinquish a disproportionate share of the civilian market.”³⁰⁷

2. Strategic Movement

The timeliness of production is only one factor in the overall equation but, once available, food and water must get to where they are needed. The bulk movement and staging of resources is the next phase in this process. Responding to the Cascadia Subduction Zone (CSZ) would carry with it several disadvantages. Due to historical disaster activity and proximity to major urban centers along the eastern seaboard, most of FEMA’s resources are concentrated on the opposite end of the continent. The Cascades themselves also create a natural geographic barrier to road transportation. So aircraft, and even ships, would be needed to provide bulk—or strategic—transport of resources. Some sense of priority response areas, as well as areas for staging resources, is necessary in order to understand the constraints of time and space on resource movement.

Charles Fritz and John Mathewson proposed their “spatial model of convergence behavior,” which they depict as concentric circles (or, “zones”) emanating out from the disaster-stricken area, with “radii [representing] ... roads, railways, airlines, and communication lines or channels leading toward the disaster area” (see Figure 1).³⁰⁸ In the context of the CSZ, food and water would need to be moved from a remote zone into the disaster area. However, the problem of over-convergence in the immediate disaster area, as well as the damage to various modes of transportation infrastructure, would necessitate arranging the movement and staging in locations in the contiguous and proximate zones.

³⁰⁶ The White House, *National Defense Resources Preparedness*, Executive Order 13603 (Washington, DC: The White House, 2012), <https://obamawhitehouse.archives.gov/the-press-office/2012/03/16/executive-order-national-defense-resources-preparedness>.

³⁰⁷ Farm Services Agency, *Disaster Assistance Fact Sheet: Agriculture Priorities and Allocations System (APAS)* (Washington, DC: U.S. Department of Agriculture, October 2015), www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/FactSheets/2015/apas_fact_sheet_oct2015.pdf.

³⁰⁸ Fritz and Mathewson, *Convergence Behavior in Disasters*, 5–6.

Relatedly, Fritz and Mathewson observed “the mass movement of people, messages, and supplies toward the disaster-struck area ... [which] greatly magnifies and complicates control efforts, and substantially retards organized relief efforts.”³⁰⁹ What they termed a problem of “social control” meant that these ingress routes could become clogged with non-official traffic. Governments have some degree of control over this through the use of traffic controls, airspace restrictions, and curfews, with even greater control in island environments or other remote or isolated locations.

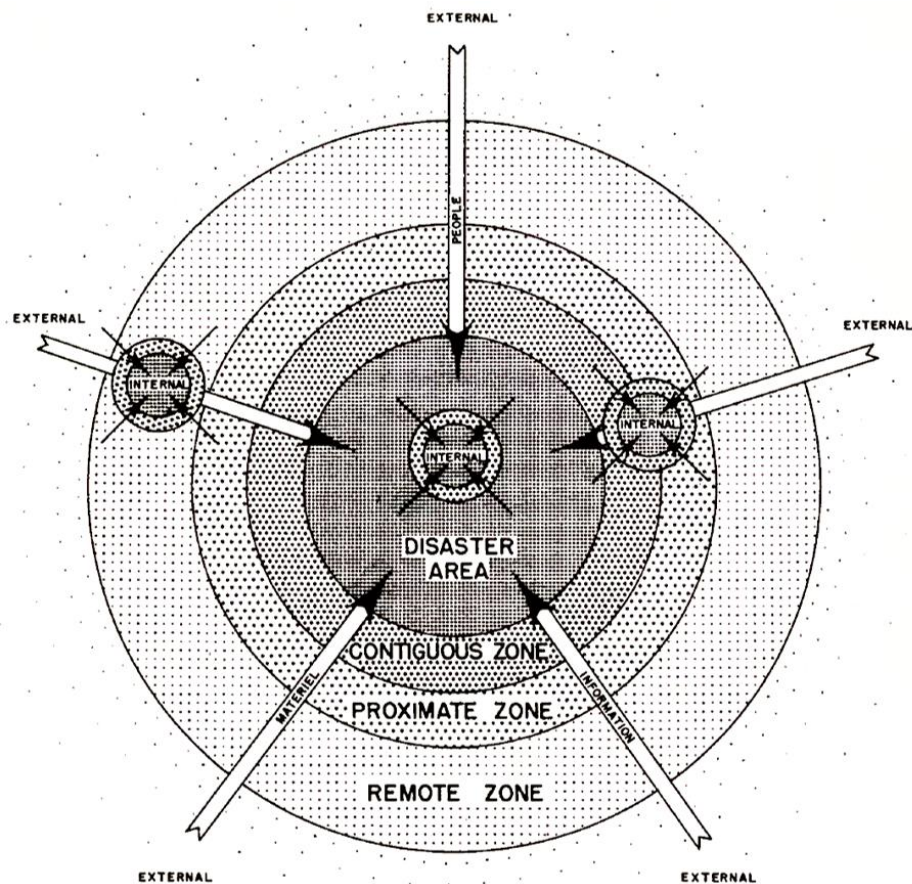


Figure 1. Spatial Model of Convergence Behavior³¹⁰

³⁰⁹ Fritz and Mathewson, 1.

³¹⁰ Fritz and Mathewson.

However, distance and remoteness carry with them their own perils. Economist Kenneth E. Boulding introduced the concept of “loss of strength gradient,” which was critical in developing two related but distinct theories within military logistics.³¹¹ The first, the law of diminishing strength, asserts that it costs more to move further, and efficacy is reduced over distance. The second, the law of diminishing time, asserts that resources can spend less time at the destination due to sustainment requirements. In the context of disaster response, this means that the greater the distance to the disaster area, the greater the cost—not just in terms of money, but also the sheer amount of work (energy) required.

As a result, it becomes important to prioritize which resources can gain access to a limited number of vehicles, ships, and aircraft headed toward the disaster area. During Operation Iraqi Freedom in 2003, the GAO found that the military lacked “an effective process for prioritizing cargo for delivery [which] precluded the effective use of scarce theater transportation assets.”³¹² Meals and water will already be a lower priority than “life-saving” resources, such as search and rescue teams, medical teams, or other responders focused on immediate life-safety. To complicate the matter further, FEMA’s ability to prioritize does not enjoy the same command-and-control structure as the military. Prioritization requires a unity of effort, where joint objectives between the federal and state governments drive the phasing of resources. Once these shipments arrive in the contiguous or proximate zones, how does food and water get into the hands of those in need?

3. Last-Mile Distribution

The disaster area (as well as the contiguous zone to which survivors have evacuated) constitutes the “last mile” of distribution. The DoD describes the “last tactical mile,” a related concept, “where strategic distribution ends and tactical distribution begins; from the ship, port or airfield and forward.”³¹³ This definition does not seem sufficient,

³¹¹ Kenneth E. Boulding, *Conflict and Defense: A General Theory* (New York: Harper & Brothers, 1962), 262.

³¹² William Solis, *Defense Logistics: DoD Has Begun to Improve Supply Distribution Operations, but Further Actions Are Needed to Sustain These Efforts*, GAO-05-775 (Washington, DC: GAO, 2005), 8, <http://www.gao.gov/new.items/d05775.pdf>.

³¹³ “Supply Chain and the ‘Last Tactical Mile,’” Defense Acquisition University, accessed October 14, 2017, http://icatalog.dau.mil/mobile/CLL037/DAU_Supply_Chain_Atlas/010125/010125000060.html.

though, since it only covers strategic movement. Onward movement of the right item to the end user is a necessary expansion in order to properly discuss last-mile logistics. While the military has a compendium of doctrine on tactical logistics, their primary focus is not necessarily focused on ensuring delivery and receipt to all Americans. The objective here is about meeting a need (hunger or thirst), not about moving a thing. That objective requires exponential growth in the time and distance required to move resources over the military's last tactical mile definition. So, what organization has such a mission?

Greek historian Herodotus wrote of Xerxes's messengers during the Greco-Persian wars that "There is nothing mortal that reaches its destination more rapidly than these couriers ... neither snow, nor rain, nor heat, nor night prevents them from performing their appointed stage as quick as possible."³¹⁴ A modified version of this passage can be found etched in granite above the entrance to the General Post Office in New York City, and is considered the unofficial motto of America's letter carriers. The United States Postal Service (USPS) is one example of a federal instrumentality that has the mission to provide last-mile delivery. The USPS is obligated by law to "bind the Nation together" by "[rendering] postal services to all communities."³¹⁵ This requirement, known as the universal service obligation, is the primary value proposition of the USPS to the nation: the federal government guarantees last-mile delivery for mail and parcels. Constraints placed on USPS funding have impacted operational performance in recent decades, which has caused the USPS Office of the Inspector General to attempt to redefine exactly what the universal service obligation means.³¹⁶ The USPS Office of the Inspector General concludes that taxpayers in the United States have little appetite for funding USPS operations, but cautions that there must be a "recognition that obligations create costs and

³¹⁴ Herodotus, *The Persian Wars*, translated by Henry Cary (New York: Harper, 1876), Book 8, Paragraph 98, <https://archive.org/details/herodotusnewlite00hero>.

³¹⁵ Postal Policy, 39 U.S.C. § 101.

³¹⁶ United States Postal Service (USPS) Office of the Inspector General, "Guiding Principles for a New Universal Service Obligation," RARC-WP-15-001 (report, USPS Office of the Inspector General, November 2014), https://www.uspsoig.gov/sites/default/files/document-library-files/2015/rarc-wp-15-001_0.pdf.

these costs must be borne by someone.”³¹⁷ The USPS has recognized that, based on a renegotiation of the social contract, it must alter its longstanding historical standard.

In the aftermath of Hurricane Maria in Puerto Rico, initial difficulties in last-mile logistics led to stockpiles of supplies on the island, with relatively few supplies getting into the hands of those survivors most in need. Roughly two weeks after the storm devastated the island, the mayor of Cánovanas, Puerto Rico, told the *New York Times*, “I received 10,000 meals so far, and we’re a city of 54,000.... We need more water. We need more food.”³¹⁸ An executive from Crowley, a shipping and logistics company, told the *Washington Post* in a September 28, 2017, article, “There is damage to the trucking infrastructure, to the distributors, to the supermarkets, to the roads. And then, if your infrastructure is not so damaged, and you can get a driver to the truck, there is no fuel to move the equipment.”³¹⁹ In Puerto Rico, supplies began to stack up at the ports due to the inability to move them out as quickly as new supplies were being offloaded into the ports. The GAO found a similar phenomenon in the lead-up to the 1991 Gulf War, writing that “Containers began stacking up in the ports because the transportation system could not move them out of the port areas quickly.”³²⁰ In Puerto Rico, given the heavy rains and the poor condition of landing zones for aircraft, as well as the need to free up capacity at the ports, novel solutions were required. FEMA and the military began airdrops of commodities in some of the more remote areas throughout the island.³²¹ These airdrops used both fixed- and rotary-wing aircraft (planes and helicopters, respectively).

³¹⁷ USPS, 18.

³¹⁸ Jack Healy, Frances Robles, and Ron Nixon, “Aid Is Getting to Puerto Rico. Distributing it Remains a Challenge,” *New York Times*, October 3, 2017, <https://www.nytimes.com/2017/10/03/us/puerto-rico-aid-fema-maria.html>.

³¹⁹ Arelis R. Hernández and Steven Mufson, “Getting Relief Supplies to Puerto Rico Ports is Only Half the Problem,” *Washington Post*, September 28, 2017, https://www.washingtonpost.com/business/economy/getting-relief-supplies-to-puerto-rico-ports-is-only-half-the-problem/2017/09/28/9ff558a6-a460-11e7-8cfe-d5b912fab99_story.html?utm_term=.399bbbeddf4fb.

³²⁰ Solis, *Defense Logistics*, 8.

³²¹ “Commodity Air Drops to Central Island Communities,” FEMA, October 10, 2017, <https://www.fema.gov/news-release/2017/10/10/commodity-air-drops-central-island-communities>.

a. *High-Demand / Low-Availability Military Aircraft*

If you can get a helicopter in to rescue an injured person (e.g., New Orleanians stranded on their rooftops after Katrina, climbers blown off course on Mount Hood, a fisherman at sea, or a heart attack patient in a rural area), there is typically very little debate. Saving a life is broadly viewed as a worthy outcome. Even a failed attempt would be seen as a heroic effort. Between the fire service, law enforcement, and state militaries, governors have access to a wide array of rotary-wing airframes. Following Hurricane Irma's impacts upon the Florida Keys, Florida Army National Guard helicopters delivered relief supplies directly to an airfield. Even without forklifts or other equipment, survivors showed up and helped offload supplies.³²² This example illustrates both the ubiquity and utility of rotary-wing aircraft in disaster relief scenarios. However, they are not the only available option.

The operational range of most helicopters is limited to around 400 miles, so fixed-wing aircraft may be preferable. One of the more common fixed-wing aircraft is the C-130. These aircraft are under the control of various armed services—the U.S. Air Force and Coast Guard, among others—as well as under the authority of the Adjutants General (TAGs) of state Air National Guards. Unless they have been federalized by the President, the TAGs' bosses are the governors of the states and territories. As a result, many governors have their own organic fixed-wing airlift capability. If a C-130 is needed to transport water and meals, those aircraft can only hold a maximum of six 463L pallets, and have an operational range greater than 2,000 miles. Sometimes these aircraft are not enough for the mission. A C-17 can hold more water and meals with eighteen pallet positions.³²³ A C-5 can hold twice that number.³²⁴ Both have a theoretically unlimited operational range with the help of in-flight refueling. However, these aircraft are considered “strategic airlift”

³²² Jeff Costello, “Photos Capture Obliterated Homes, Resilient Survivors in Irma-Slammed Florida Keys,” ABC News, September 13, 2017, <http://abcnews.go.com/US/photos-capture-obliterated-homes-resilient-survivors-irma-slammed/story?id=49834174>.

³²³ “Fact Sheet: C-17 Globemaster III,” U.S. Air Force, October 1, 2015, <http://www.af.mil/About-Us/Fact-Sheets/Display/Article/104523/c-17-globemaster-iii/>.

³²⁴ “Fact Sheet: C-5M Super Galaxy,” U.S. Air Force, May 15, 2006, <http://www.af.mil/About-Us/Fact-Sheets/Display/Article/104492/c-5-abc-galaxy-c-5m-super-galaxy/>.

assets. Their use is governed by a functional combatant command of the U.S. military—the U.S. Transportation Command.

If the governor of a state requests the use of these assets, he or she must request federal forces up to DoD, either through a military request from the TAG or under Defense Support to Civil Authorities (DSCA) through FEMA (who would then mission assign DoD). If the governor's priorities are to provide water and meals to survivors, FEMA would need to source this "resource request" to its interagency partners, and would ultimately turn to DoD as the provider. FEMA's meals and water, if available, would be palletized (a process by which commodities are made air-transportable, as determined by an aircraft's loadmaster), and made ready for shipment at an airfield with the appropriate personnel and materiel-handling equipment. If FEMA did not have any other priorities (such as the movement of private-sector power restoration teams, federal vehicles and equipment, or federal personnel), the agency could preliminarily accept the request. DoD, as the ultimate provider, could still accept this request if it did not need the aircraft for its own DSCA resource movement requirements. The DoD could also reject the request outright if these assets were being used for other, higher-priority federal missions, such as overseas combat operations. These are the President's aircraft, after all.

DoD's mission is "to provide the military forces needed to deter war and to protect the security of our country."³²⁵ This is usually interpreted as protecting the nation from external threats. So if these aircraft are being used to resupply forces in Afghanistan or another conflict zone, what is the immediacy of the need? What about a long-term troop buildup (e.g., Iraq in 1991 and 2003)? If American lives are at stake here at home, should this not force a reprioritization or reconsideration in favor of using these assets for domestic disaster relief? DoD prioritizes within its own internal processes—based on strategic guidance from the White House and the Pentagon—in accordance with a document entitled

³²⁵ Department of Defense (DoD), "Mission," January 27, 2017, <https://www.defense.gov/About/>.

Guidance for Employment of the Force.³²⁶ Within that framework, the homeland defense mission (which includes DSCA) is provided with a set “force apportionment.” If forces have not been apportioned for DSCA, and are engaged in “current operations,” they are not available for such a contingency. Structural violence, in the form of bureaucratic inertia, is a major factor in this case. While the President, as commander in chief, can countermand these internal DoD policies, he or she would have to (1) be made aware of the potential conflict in requirements, and (2) be willing to do so.

b. *Fear and Looting*

During the response to Hurricane Katrina in Mississippi, U.S. Representative Gene Taylor was trying to convince FEMA to expand the number of commodity distribution sites, telling a FEMA representative in Hancock County, “You have got to bring the food to the people.”³²⁷ Taylor recounts the FEMA official telling him that a limiting factor in opening additional points of distribution was that, “If we don’t have the National Guard there when we distribute food, there’ll be rioting.”³²⁸ The congressman recalled being “so infuriated ... that he grabbed [the FEMA employee] by the collar [and told him,] ‘We [the people of Southern Mississippi] all know each other.... If someone gets out of line, his neighbors will tell him, ‘Get back in line.’”³²⁹ The congressman’s solution was to simply offload the supplies from the FEMA trailers and have the National Guard distribute items to a greater number of smaller points of distribution (bringing the food to the people). A

³²⁶ Patrick C. Sweeney, “A Primer for: *Guidance for Employment of the Force* (GEF), *Joint Strategic Capabilities Plan* (JSCP), the *Adaptive Planning and Execution* (APEX) System, and *Global Force Management* (GFM)” NWC 2061B (report, Naval War College, 2011), <https://jsou.blackboard.com/bbcswebdav/library/Library%20Content/JSOU%20References/SOPC/A%20Primer%20for%20Guidance%20for%20Employment%20of%20the%20Force%20%28GEF%29%2C%20Joint%28A9R725%29.pdf>.

³²⁷ James Patterson Smith, *Hurricane Katrina: The Mississippi Story* (Jackson: University Press of Mississippi, 2012), 57.

³²⁸ Smith, 57.

³²⁹ Smith, 57.

similar approach to access isolated communities, using both military and law enforcement personnel, was used in the response to Hurricane Maria in Puerto Rico.³³⁰

In New Orleans, following Katrina, the situation was far different, with “exaggerated media reports of crime” scaring away drivers carrying relief supplies.³³¹ In some cases, public officials, including Governor Kathleen Blanco of Louisiana, Mayor Ray Nagin of New Orleans, and Chief Eddie Compass of the New Orleans Police Department, helped to fuel these reports. Then-FEMA Director Michael Brown told reporters that relief work was being done “under conditions of urban warfare.”³³² This created a situation where not even the authorities served as trusted sources during this crisis. These leaders seemed to believe that through professing knowledge of the situation they were reinforcing an idea in the minds of the public that they had some measure of control. Though, as Iberia Parish Sheriff Sid Hebert remembered, “It was all violent crime, rape and pillaging. But none of it was true.”³³³ The media’s inability to corroborate or provide basic fact-checks on these stories led the Chief of the National Guard Bureau to testify to Congress that media reports “prevented truck drivers coming with the most needed supplies.... They were afraid to come in.... They delayed the exact commodities from getting to the people that they were complaining weren’t getting the commodities.”³³⁴ This media hype turned into fear for those assisting in the relief effort, and spurred tangible negative impacts.

While there was certainly hype around looting, rioting, and violent crime in New Orleans after Katrina, law and order issues were still a significant hindrance to relief and restoration. A Pulitzer prize-winning investigation by the *Times-Picayune* concluded only weeks later that “soldiers, police officers and rescue personnel on the front lines say that

³³⁰ Shawn Cohen, “Puerto Rico Relief Effort Brings ICE, National Guard Together,” *New York Post*, October 25, 2017, <https://nypost.com/2017/10/25/puerto-rico-relief-effort-brings-ice-national-guard-together/>.

³³¹ U.S. House, *A Failure of Initiative*, 249.

³³² Chris Lawrence and Ed Lavandera, “Relief Workers Confront ‘Urban Warfare,’” CNN, September 1, 2005, <http://www.cnn.com/2005/WEATHER/09/01/katrina.impact/>.

³³³ Robert E. Pierre and Ann Gerhart, “News of Pandemonium May Have Slowed Aid,” *Washington Post*, October 5, 2005, http://www.washingtonpost.com/wp-dyn/content/article/2005/10/04/AR2005100401525_2.html.

³³⁴ U.S. House, *A Failure of Initiative*, 249.

although anarchy reigned at times and people suffered unimaginable indignities, most of the worst crimes reported at the time never happened.”³³⁵ One of those moments of anarchy was when the police themselves invoked their discretion to not enforce certain laws. As one report notes, “People were seen on television taking things from stores ... what the police call ‘essential items,’ for which people were not being arrested because the situation was so dire.”³³⁶ In one debate over media coverage at the time, driven by accusations of implicit racial bias, wire service Agence France-Presse captioned a photo of a white person carrying goods as “finding” them, while the Associated Press captioned a photo of a black person carrying goods as “looting” them. The debate was reignited in 2017 following Hurricane Harvey in Texas, when one journalist tweeted that he was “witnessing looting right now at a large supermarket,” with coverage of the tweet itself and the ensuing debate noting the “loaded meaning [of the term ‘looting’] regardless of the reality behind the situation.”³³⁷ This reinforces the importance of equity in disaster response, where not only the reality but also the perception of equal protection are expected.

Irrespective of the equity considerations around how officials and the media describe looting or other civil disturbances in the wake of a catastrophic disaster, the lack of access to food and water still remains a practical evil that has to be managed. Grocery stores or other big-box stores in the impacted area will remain closed as long as employees are unable to show up for work, power and other utilities remain out, and deliveries are unable to be made. Still, many of these stores will have food and water, with a variety of expiration dates, still sitting on their shelves. If stores are the closest and most practical location for impacted individuals and communities to obtain provisions, is there a set of ethical options for provisioning from them?

While the police in New Orleans effectively decriminalized the taking of “essential supplies” from stores through selective enforcement, that taking still constitutes a crime. If

³³⁵ Brian Thevenot and Gordon Russell, “Rape. Murder. Gunfights,” *Times-Picayune*, September 26, 2005, http://www.nola.com/katrina/index.ssf/2005/09/rape_murder_gunfights.html.

³³⁶ Pierre and Gerhart, “News of Pandemonium.”

³³⁷ Colleen Shalby, “What’s the Difference between ‘Looting’ and ‘Finding’? 12 Years after Katrina, Harvey Sparks a New Debate,” *Los Angeles Times*, August 29, 2017, <http://www.latimes.com/nation/la-na-harvey-20170829-story.html>.

the storeowner did not permit the taking, that is theft. In a case where the storeowner provides permission but is unable provide physical access to the store, local authorities who can access the store would have to become the owner's agents. Their responsibilities would include not only providing access (i.e., through a Knox Box or forcible entry), setting any parameters for rationing, and distributing specific types of food items, but also keeping track of what is taken to enable any later accounting or reimbursement. In addition to traditional stores, a grocery chain's regional distribution centers, as well as other warehouses in the supply chain storing food and water, could help augment this nontraditional solution.

However, care should be taken to guard against moral hazard. While shelf-stable items, or other items that would not have expired prior to the store reopening, are obvious candidates for reimbursement, items that would have otherwise spoiled had they not been distributed should only be accounted for once. In other words, in order to avoid duplication of benefits, any claims by the storeowner for private business interruption insurance benefits for food spoilage losses should not also be claimed for public reimbursement.

There are two other potential issues that could arise, both related to the specific geographic location. If one warehouse or store has lower stocks than a nearby community but the surrounding community has less of a need, protocols would need to be developed for shuttling aid from point to point, or reallocating, within the broader disaster area. In addition, officials would need to maintain close coordination with the private-sector owners of all stores and warehouses in the area to monitor the duration of such an operation, as well as its geographic breadth and scale. Officials will want to avoid the accusation of inequity—perceived or actual—that one community is being availed of a “supermarket sweeps”-like offering, while neighboring communities either still have to eat MREs or, on the other end of the spectrum, have fully functioning stores where they are paying upfront for the food that others are getting for free.

Despite these potential issues, appropriate pre-incident planning and coordination makes this a tractable solution. With specific guidance on how to take sundries from stores and warehouses and convert them into meals that can be expediently produced in a disaster environment, as well as limited last-mile distribution solutions, local officials could counter

the risk of commodities not getting there. If enough nutritious food is already there, it does not need to be transported from somewhere else. In addition, the fears over law and order could be mitigated by effectively turning private food companies into relief organizations, allowing law enforcement to concentrate on other public safety priorities.

D. PHYSIOLOGICAL NEEDS AFTER A DISASTER

Disasters cause shocks, which disrupt the established economy. When the supply side of the normal economy is disrupted, demand does not diminish for items that individuals need to survive; in some cases, the demand will likely increase. As José Holguín-Veras notes, the supply chain normally internalizes the costs of production and logistics in non-disaster times. However, the needs of the survivor create negative externalities in the market, which he refers to as “deprivation costs.”³³⁸ He defines such costs as “the economic valuation of the human suffering associated with a lack of access to a good or service.”³³⁹ The contingency supply chain, or what Holguín-Veras refers to as the “humanitarian logistics” model, is implemented in response to deprivation costs on a community.

Some researchers have argued that current approaches to measuring the effectiveness of disaster response have created “lists of needs disassociated from the nexus of needs of the needy.”³⁴⁰ Rather than rethinking the framework for approaching disaster survivor’s needs, this analysis uses an adaptation of Abraham Maslow’s hierarchy of needs. The Disaster Survivor’s Hierarchy of Needs stresses the importance of satisfying physiological needs prior to any other needs.³⁴¹ Since food and water comprise two of the most basic requirements to meet basic physiological needs, this section explores what

³³⁸ José Holguín-Veras et al., “On the Unique Features of Post-disaster Humanitarian Logistics,” *Journal of Operations Management* 30, no. 7–8 (2012): 498.

³³⁹ Holguín-Veras et al., “Appropriate Objective Function.”

³⁴⁰ Donald A. Donahue et al., “The All Needs Approach to Emergency Response,” *Homeland Security Affairs* 8 (February 2012): article 1, <https://www.hsaj.org/articles/204>.

³⁴¹ Karin Jordan, “The Disaster Survivor’s Hierarchy of Needs: What Every Disaster Mental Health Worker Should Know,” *Ideas and Research You Can Use: VISTAS 2015* (2015): article 95, <https://www.counseling.org/docs/default-source/vistas/the-disaster-survivor.pdf?sfvrsn=6>.

drives those needs, why governments might be expected to provide them following an economic shock, and general guidelines for their provision.

In order to understand how disaster relief organizations meet post-disaster hydration and feeding requirements, response-generated demands are not explicitly factored into this analysis, but they would play a role in terms of prioritizing initial availability of scarce resources. The disaster logistics supply chain needs to provide not only for the needs of survivors, but also for the response itself. This is the emergency response equivalent to the in-flight safety instruction: “Place the oxygen mask on yourself before helping the person next to you.” Military history is replete with examples of the importance of supply lines to sustainment of the fight. Often attributed to Napoleon, the notion that “An army marches on its stomach” can equally be applied to emergency responders, including search-and-rescue, medical, law enforcement, route clearance, and other teams deployed in austere operating environments. If the responders are hungry or thirsty, they become ineffective. Faced with a shortage of food during his troubled winter of 1777–78 at Valley Forge, General George Washington wrote to the Continental Congress that the Continental Army would “Starve—dissolve—or disperse, in order to obtain subsistence in the best manner they can.”³⁴² Likewise, emergency responders’ needs for logistics support can be two to three times greater than those of survivors.³⁴³ So if the responders also need to be supported, that could further stress the contingency supply chain and force prioritization and allocation decisions—both in terms of food and water availability and throughput (including the temporal, geographic, and technical constraints on specific modes of conveyance, transportation networks, personnel, and equipment).

³⁴² George Washington, to Henry Laurens (December 23, 1777), Founders Online, accessed June 23, 2018, <https://founders.archives.gov/documents/Washington/03-12-02-0628>.

³⁴³ José Holguín-Veras, Miguel Jaller, and Tricia Wachtendorf, “Comparative Performance of Alternative Humanitarian Logistic Structures after the Port-au-Prince Earthquake: ACEs, PIEs, and CANs,” *Transportation Research Part A: Policy and Practice* 46, no. 10 (2012): 1623–1640, doi.org/10.1016/j.tra.2012.08.002.

1. Hydration

In order to understand how the need for water is identified during disaster response, it is necessary to establish the baseline condition and expectations of individuals for clean drinking water. That is the fundamental step in understanding why FEMA and other disaster relief organizations provide water.

a. *Hydration as a Life-Sustaining Imperative*

Water is vital to human survival, and its availability, as well as its absence, has driven the establishment and development of civilizations throughout history. Biologists estimate that a human can survive without clean drinking water, depending upon their environment, level of physical exertion, and other exacerbating health conditions, anywhere from a few hours to a full week.³⁴⁴ The scientific research is well established regarding the adverse effects of dehydration and other conditions exacerbated by low fluid intake, although the practical guidance on this varies widely. Popular convention refers to a survival “rule of three,” which posits that a human can survive only three minutes without air, three days without water, and three weeks without food, assuming he or she has shelter.³⁴⁵ The question remains, though: How much water is sufficient for survival?

In a 2004 World Health Organization study, researchers found that “Total daily fluid [drinking water] requirements have been shown to range from as little as 2 [liters] per day to 16 [liters] per day pending [sic] on the work load and the level of heat stress.”³⁴⁶ Operationally, the World Health Organization recommends 2.5 to 3 liters of drinking water per day, based on *The Sphere Handbook*, which contains minimum standards for the delivery of relief supplies that humanitarian organizations may adopt on a voluntary

³⁴⁴ Randall K. Packer, “How Long Can the Average Person Survive Without Water?” *Scientific American*, December 9, 2002, <https://www.scientificamerican.com/article/how-long-can-the-average/>.

³⁴⁵ “Wilderness Survival Rules of 3—Air, Shelter, Water and Food,” *Backcountry Chronicles*, May 29, 2012, <http://www.backcountrychronicles.com/wilderness-survival-rules-of-3/>.

³⁴⁶ Agnes Grandjean, “Rolling Revision of the WHO Guidelines for Drinking-Water Quality: Water Requirements, Impinging Factors, and Recommended Intakes” (draft for review, World Health Organization, August 2004), 5, http://www.who.int/water_sanitation_health/dwq/nutwaterrequir.pdf.

basis.³⁴⁷ Sphere’s “total basic water needs,” which also include water for hygiene and cooking, equate to 15 liters per person per day, with flexibility given for differences in climate, individual physiology, and local norms.³⁴⁸ International aid organization Oxfam recommends five liters per person per day for a combination of drinking and food preparation.³⁴⁹ The U.S. Army’s drinking water standards for soldiers working outdoors ranges from roughly three to four liters per day for easy work in a mild climate, to roughly eight liters per day for hard work in the hottest climates (assuming an eight-hour day in direct sunlight, working for only ten minutes each hour and resting for the remaining fifty minutes).³⁵⁰

b. Water as a Human Right

The United Nations (UN) General Assembly adopted a resolution in 2010, which affirmed “equitable access to safe drinking water” as “essential for ... all human rights.”³⁵¹ The UN High Commissioner for Human Rights extends the definition of equitable access contained in the General Assembly resolution to also mean that no person should be denied access to water due to “inability to pay.”³⁵² However, in the context of America’s social contract, it is not enough to simply recognize a proclamation from an international organization in order to consider something a universal right. The thing about universal human rights is that they are almost universally described as rules, which almost universally have exceptions that prove them. Rights can also create obligations for others,

³⁴⁷ Brian Reed and Bob Reed, “Technical Note 9: How Much Water Is Needed in Emergencies,” in *Technical Notes on Drinking-Water, Sanitation and Hygiene in Emergencies* (Geneva: World Health Organization, 2011), http://www.who.int/water_sanitation_health/publications/2011/tn9_how_much_water_en.pdf.

³⁴⁸ “Water Supply Standard 1: Access and Water Quantity,” The Sphere Project, accessed June 23, 2018, <http://www.spherehandbook.org/en/water-supply-standard-1-access-and-water-quantity/>.

³⁴⁹ “Oxfam Water Supply Scheme for Emergencies,” Oxfam, accessed December 1, 2017, 2, <http://www.bvsde.paho.org/texcom/desastres/oxfamwfm.pdf>.

³⁵⁰ Grandjean, “Rolling Revision of WHO Guidelines.”

³⁵¹ G.A. Res. 64/292 (February 5, 2018), <https://undocs.org/A/RES/64/292>.

³⁵² Rep. of the H.R.C., U.N. Doc A/HRC/6/3 (2007), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G07/136/55/PDF/G0713655.pdf?OpenElement>.

which creates social and political friction that must be dealt with in the course of fulfilling the social contract.

Some believe that safe drinking water is not a human right. In saying this, they are also asserting that should a government provide water, it should recover any associated costs. Ken Isaacs, the former director of USAID's Office of Foreign Disaster Assistance, has publicly stated that "Clean water's not a human right. It is something we all want to aspire to see people to get, but it's not a right, it's not guaranteed anywhere, and you have to work for it."³⁵³ His basis for this argument is that rights can only be divinely granted, but he continues by grounding his argument in the purely rational economic principle that societies face trade-offs. He asks rhetorically, "Any time that a government gives a right ...who's going to pay for that?"³⁵⁴ Isaacs highlights the potential for ambiguity and confusion between epistemological philosophy and pragmatism. Something can still be impractical but, at the same time, also considered a right.

South Africa provides a clear example of this dichotomy. The country has grappled with water shortages due to drought and poor infrastructure planning, but its Constitution outlines the rights of its citizens, which "the state must respect, promote, and fulfill."³⁵⁵ Among those rights is "sufficient food and water," which the government is required to "take reasonable ... measures, within its available resources, to achieve the progressive realisation of each of these rights."³⁵⁶ In South Africa's 2018 water crisis, the city of Cape Town began a countdown to "day zero"—the date at which water stores were projected to become so low that the city would shut off the water supply to all but the most essential facilities. Faced with a situation where other cities in the country might soon experience their own water shortages, a zero-sum mindset took hold. When a tanker truck was caught

³⁵³ Aaron C. Davis and Jack Gillum, "Trump Nominee for U.N. Migration Post Called Muslims Violent, Christians Top Priority," *Washington Post*, February 3, 2018, https://www.washingtonpost.com/investigations/trump-nominee-for-un-migration-post-called-muslims-violent-christians-top-priority/2018/02/03/a1c99c50-0851-11e8-b48c-b07fea957bd5_story.html?utm_term=.c69641244bcf.

³⁵⁴ Davis and Gillum.

³⁵⁵ South African Const. Dec. 3, 2017, Ch. 2 § 7-39, <http://www.justice.gov.za/legislation/constitution/SACConstitution-web-eng-02.pdf>.

³⁵⁶ South African Const. Dec. 3, 2017, Ch. 2 § 7-39.

taking water from a municipal well in Mogale City, near Johannesburg, intending to ship it to Cape Town, the mayor of that city said it was “a gross violation of the rights of the citizens [of Mogale City].”³⁵⁷

In the international context, through the activities of humanitarian organizations and the pronouncements of intergovernmental organizations like the UN, access to clean drinking water is broadly viewed as a fundamental human right.³⁵⁸ In the United States, while the Constitution does not explicitly list clean drinking water in the Bill of Rights, the Clean Water Act of 1972, the Safe Drinking Water Act of 1974, and a variety of other laws and regulations have established the view of the American body-politic that all Americans are entitled to clean drinking water. The political action group that spearheaded the passage of the Clean Water Act asserts that “clean water is the foundation for healthy [and] prosperous communities.”³⁵⁹

While it is still unclear whether or not clean drinking water is a fundamental right within the United States, it is certainly something that citizens demand of local utilities. Therefore, our communities’ water infrastructures are designed around delivery that is both adequate and reliable. Adequacy means that consumption requirements are met, plus an additional amount for fire suppression.³⁶⁰ Consumption requirements would include drinking water, food preparation, hygiene, and other residential or industrial uses. Reliability means that “the required amount of water needs to be available 24 hours a day, 365 days a year.”³⁶¹ To fulfill these expectations, water and wastewater infrastructure

³⁵⁷ Petru Saal, “Stealing Gauteng Municipal Water—Even to Send to Parched Cape Town—Is Still Stealing,” *BusinessDay*, February 1, 2018, <https://www.businesslive.co.za/bd/national/2018-02-01-stealing-gauteng-municipal-water-even-to-send-to-parched-cape-town-is-still-stealing/>.

³⁵⁸ “Flint Michigan Crisis ‘Not Just about Water,’ UN Rights Experts Say ahead of President Obama’s Visit,” UN News Centre, May 3, 2016, <http://www.un.org/apps/news/story.asp?NewsID=53839>.

³⁵⁹ “Water,” Clean Water Action, accessed December 1, 2017, <http://www.cleanwateraction.org/our-priorities/water>.

³⁶⁰ Insurance Services Office, *Guide for Determination of Needed Fire Flow*, Edition 05-2008, (Jersey City, NJ: ISO Properties, 2008), <http://www.ecs.umass.edu/cee/reckhow/courses/371/Documents/Needed%20Fire%20Flow%20Guide%202008.pdf>.

³⁶¹ Harry E. Hickey, *Water Supply Systems and Evaluation Methods: Volume I: Water Supply Systems Concepts*, October 2008, *Water Supply Systems and Evaluation Methods* (Washington, DC: FEMA, 2008), 2, https://www.usfa.fema.gov/downloads/pdf/publications/water_supply_systems_volume_i.pdf.

systems have been built to service American communities. These systems include water sources (like reservoirs or wells), pumping stations, treatment facilities, and pipes of various capacities.³⁶²

In recognizing the engineering achievement that modern drinking water systems represent, one civil engineer invoked the Divine when he proclaimed, “Water is God’s gift, we always say, but He forgot to lay the pipes.”³⁶³ The U.S. federal government uses similarly lofty language in its description of water and wastewater infrastructure systems, characterizing them as “essential to modern life and the Nation’s economy.”³⁶⁴ But what happens to God’s gift, modern life, and the nation’s economy when those infrastructure systems experience a shock? When a shock such as a natural disaster interrupts the availability of drinking water, the need does not disappear. In modern life, our regular access to clean drinking water—without the requirement that we collect it ourselves, filter it, treat it, or otherwise do much more than turn the tap—has created a series of expectations. One of those expectations is that, following a shock that disrupts the existing infrastructure, the supply of water into an impacted area must continue on a contingency basis. In the United States, any discussion of ethical principles around provision of water after a disaster thus begins at how the contingency operation, or the response, is executed—not whether the response should be executed.

2. Feeding

Just as it is essential to understand why individuals need water after a disaster, and why relief organizations provide that water, it is likewise essential to understand why meals are provided, especially in the wake of catastrophic disasters.

³⁶² Department of Homeland Security, *Water and Wastewater Systems Sector-Specific Plan* (Washington, DC: Department of Homeland Security, Environmental Protection Agency, 2015), 4, <https://www.dhs.gov/sites/default/files/publications/nipp-ssp-water-2015-508.pdf>.

³⁶³ Charles C. Mann, “The Rise of Big Water,” *Vanity Fair*, September 1, 2009, www.vanityfair.com/news/2007/05/bigwater200705.

³⁶⁴ Department of Homeland Security, *Water and Wastewater Systems*, 1.

a. *Disasters Cause Food Insecurity*

One of the primary reasons that meals are provided after a disaster is that disasters cause food insecurity. The U.S. Department of Agriculture (USDA) defines food security as “at a minimum ... the ready availability of nutritionally adequate and safe foods.”³⁶⁵ In the international disaster relief context, the Sphere guidelines define food security as the availability, access (physical, social, and economic), and utilization of, and by, all people to “sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”³⁶⁶

The USDA expands the requirements for food security, not only stating that meals should be nutritious but also that they should be accessed in ways that are socially acceptable. USDA defines socially acceptable as not “resorting to emergency food supplies, scavenging, stealing, or other coping strategies.”³⁶⁷ So, aside from stockpiling food, what else can disaster survivors do in order to ensure their food security (which means they do not need to resort to emergency meals)? FEMA provides guidelines on how to stretch existing food stores for several more days, advising that perishable foods should be consumed first, then frozen foods, and finally shelf-stable/non-perishable items. FEMA goes further by recommending that survivors reduce their activity levels to conserve calories, noting that “healthy people can survive on half their usual food intake for an extended period and without any food for many days.”³⁶⁸ If they are recovering from a disaster and have agency in their own recovery, is it reasonable to assume that they should remain sedentary? If survivors conserve their food, waiting around for meals from the government, what else is being sacrificed in that transaction?

³⁶⁵ “Measurement,” United States Department of Agriculture Economic Research Service, accessed June 23, 2018, <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement#insecurity>.

³⁶⁶ “Humanitarian Charter and Minimum Standards in Food Security and Nutrition,” The Sphere Project, accessed December 1, 2017, <http://www.spherehandbook.org/en/introduction-3/>.

³⁶⁷ Department of Agriculture, “Measurement.”

³⁶⁸ FEMA, *Food and Water in an Emergency* (Washington, DC: Department of Homeland Security, 2004), 6, <https://www.fema.gov/pdf/library/f&web.pdf>.

b. *The Meaning of Meals*

FEMA counts meals among the “disaster commodities” for which the organization is responsible.³⁶⁹ The concept of commodification carries with it significant psychological and sociological meaning. Karl Marx defined a commodity as “a thing that by its properties satisfies human wants ... whether, for instance, they spring from the stomach or from fancy, makes no difference.”³⁷⁰ All commodities carry value, both in exchange and in use. In addition to their economic value, commodities can also carry historical, geographical, social, and cultural meaning. As one sociologist found, “Commodities must be not only produced materially as things, but also culturally marked as being a certain kind of thing.”³⁷¹ Perspective also matters; one man’s commodity may be a unique or singular possession in the eyes of another. If one jurisdiction receives a glut of meals, additional shipments would reduce marginal utility. Demand becomes elastic. However, given the tyranny of distance and information asymmetry, a community that is starving would place a premium on any additional food. Demand in that case is, theoretically at least, infinitely inelastic.

Commodification is contrasted with personalization and individual choice. The fact that the disaster response community refers to meals and water as “commodities” is layered with meaning. It indicates an acceptance that a family’s grocery list, its dietary preferences, its brand loyalty, its dining habits, any preferences for slow or fast food are secondary to basic hydration and satiation. The capability to serve hot meals, or even provide shelf-stable specialized meals—such as kosher, halal, vegetarian, vegan, or low-sodium options—all point to a variety of preferences that may not be supportable by the supply chain. Specialization narrows the scalability of production. Tailored preferences also introduce additional complexity into the distribution network, depending upon the geographic distribution of those preferences. For many, the choice between starvation and

³⁶⁹ “Logistics Management Directorate,” FEMA, April 1, 2015, <https://www.fema.gov/logistics-management-directorate>.

³⁷⁰ Marx, *Capital*, 27.

³⁷¹ Arjun Appadurai, *The Social Life of Things: Commodities in Cultural Perspective* (Cambridge: Cambridge University Press, 1986), 64.

dietary preferences is clear—at least from the institutional perspective. Individuals, however, will struggle with clarity on that preference. For certain elements of the faithful, consumption of non-kosher or non-halal meals would be a violation of the rules of their faith. For the diabetic, or those with high blood pressure or heart issues, high-carbohydrate or high-sodium meals may exacerbate their condition. For the ethical vegetarian or vegan, including those whose faiths prescribe it, consuming meat is likewise a fundamental ethical breach. Ethical choice is not simply an individual dilemma, but should also be a primary concern of our institutions.

V. CASE STUDY SCENARIO: CASCADIA RISING

This case study is designed to put the reader in the mind of the survivor, as well as in the minds of local, state, and federal emergency management officials. By doing this, it builds a framework around disaster logistics focused on empathy, considering the practical and ethical dilemmas faced during each phase by key stakeholders. This chapter draws upon the two preceding chapters to synthesize the ethical and practical analyses and validate existing practices, or support the application of reengineered or novel solutions.³⁷²

The Cascadia Subduction Zone (CSZ) is named for a nearly 800-mile-long area along the coast of the Pacific Northwest, paralleling the stratovolcanoes of the Cascades mountain range roughly a hundred miles east. That area runs from northern California to British Columbia, Canada. The subduction zone itself is where the crust of the San Juan de Fuca tectonic plate slides under the North American plate. The U.S. Geological Survey, which is a federal agency focused on studying natural hazards, notes that earthquakes as recent as 300 years ago show the potential of a “great earthquake” and tsunami along the CSZ.³⁷³ When the CSZ ruptures, the North American plate will actually drop up to thirty feet, producing that earthquake. A full rupture could generate a 9.2-magnitude earthquake, with shaking lasting for up to five minutes, generating a Pacific-wide tsunami with waves ranging from twelve to eighty feet high. Those waves could reach the U.S. and Canadian coast ten to thirty minutes after the shaking begins. According to modeling data, FEMA expects roughly 13,000 fatalities, and double that number in injuries, during a disaster of this magnitude.³⁷⁴ Life-saving missions would take priority in the immediate hours and

³⁷² Lee Clarke, *Mission Improbable: Using Fantasy Documents to Tame Disaster* (Chicago: University of Chicago Press, 1999).

³⁷³ Laura Zink Torresan, “Cascadia Earthquakes and Tsunami Hazards Studies,” U.S. Geological Survey, July 15, 1998, <https://walrus.wr.usgs.gov/earthquakes/cascadia/>.

³⁷⁴ Kathryn Schulz, “The Really Big One,” *The New Yorker*, July 20, 2015, www.newyorker.com/magazine/2015/07/20/the-really-big-one.

days following the event, with search and rescue teams and medical teams probing into the hardest-hit areas, covering a geographic area of 100,000 square miles.³⁷⁵

With media coverage from major national magazines like *The New Yorker* and *The Atlantic* in recent years, the media, with the help of worried government officials, have raised the specter of this great earthquake in the American consciousness. Experts disagree on its exact timing, but generally agree on the looming potential for catastrophe. In the midst of criticism that the return period of a great quake along the CSZ is overdue, one scientist responded, “We’re well in the window, but it’s not overdue.”³⁷⁶ Some contend that new data from the geologic record shows an undercount of historical examples in previous studies, meaning that the revised estimate makes an earthquake even more likely in the next fifty years.³⁷⁷ Whatever the timing, there seems to be a consensus among experts, best expressed in a report by Oregon’s Secretary of State, that “There is no way to prevent such an event from happening.”³⁷⁸ With that air of inevitability, CSZ is both a useful thought experiment to illustrate ethical dilemmas as well as a practical lesson for a likely worst-case disaster.

A. ESTIMATING NEEDS

To understand the ethical dilemmas that are likely to present themselves in a CSZ scenario, it is first useful to understand how the shock, or disruption, of the disaster would cause a break from normal life.

1. Water

The earthquake will damage or destroy water infrastructure throughout the Pacific Northwest. Water mains, distribution lines, feeder lines, treatment plants, and storage tanks

³⁷⁵ FEMA Region X, *Cascadia Subduction Zone (CSZ) Catastrophic Earthquake and Tsunami Response Plan* (Washington, DC: Department of Homeland Security, 2017), 155.

³⁷⁶ Graham, “The Mothers of All Disasters.”

³⁷⁷ Robinson Meyer, “A Major Earthquake in the Pacific Northwest Looks Even Likelier,” *The Atlantic*, August 11, 2016, <https://www.theatlantic.com/science/archive/2016/08/a-major-earthquake-in-the-pacific-northwest-just-got-more-likely/495407/>.

³⁷⁸ Dennis Richardson and Kip Memmott, “The State Must Do More to Prepare Oregon for a Catastrophic Disaster” (report 2018-03, January 2018, State of Oregon), 2, <http://sos.oregon.gov/audits/Documents/2018-03.pdf>.

will all be affected in some way by the ground shaking, leading to “widespread breaks and leaks.”³⁷⁹ The damages will be higher “on the coast and in the coastal mountain chain” given the higher intensity of shaking in those areas.³⁸⁰ In areas where service continues to be available, cracked pipelines may lead to a loss in water pressure, which “may result in contaminated water supply.”³⁸¹ Coastal communities will require contingency hydration missions for “several weeks to half a year” until repairs can be made to potable water systems.³⁸² Both the delivery of drinking water and the ability to restore water infrastructure will be hampered “due to road damages.”³⁸³ Inversely, expecting survivors to move out of those areas to areas where they can be better serviced, or moving survivors out, will be made difficult by this inaccessibility and isolation. The scenario notes that “Air and sea transportation may be the only viable way to access many coastal communities.”³⁸⁴

The CSZ scenario estimates that the population requiring hydration during the initial response will be approximately 2.4 million people.³⁸⁵ FEMA’s procedures assume a requirement of three liters of water per person per day.³⁸⁶ Other standards exist, but this is the most likely planning factor to be used by FEMA during the initial response push. The agency uses the following formula to determine its initial push of bottled water: the number needing water times three liters, times an initial three days of sustainment. Based on this formula, FEMA and its partners will need to source and transport roughly 21.6 million liters of water in the first 72 hours following the disaster. The need for water will also be prolonged should the impacted coastal areas not evacuate to more sustainable zones. In coastal communities, it could take anywhere from one to three years to restore

³⁷⁹ Oregon Office of Emergency Management (OEM), “Cascadia Rising,” 154.

³⁸⁰ Oregon OEM, 154.

³⁸¹ Oregon OEM, 154.

³⁸² Oregon OEM, 154.

³⁸³ Oregon OEM, 154.

³⁸⁴ Oregon OEM, 22.

³⁸⁵ Oregon OEM, 178.

³⁸⁶ FEMA Region X, *Mass Care Metrics: Planning Branch Task Order 09, First Draft* (Washington, DC: Department of Homeland Security, 2013), 44.

water and sewer service.³⁸⁷ So contingency supplies will be required for any who remain in the disaster area for up to three years.

2. Meals

Initially, the primary driver of a feeding mission will be lack of electricity. Without power, there will be inadequate refrigeration for food, both residentially and commercially. With an estimated 60–70 percent of electric facilities in the Interstate 5 corridor of Oregon and Washington receiving “considerable” to “high” damage, the geographic scope of outages will be widespread.³⁸⁸ Emergency repairs to damaged transmission lines are estimated to “take weeks to months” due to terrain, damaged transportation networks, and fuel shortages hampering repair crews.³⁸⁹

The supported population requiring food during the initial response will be the same as those requiring water—approximately 2.4 million people.³⁹⁰ Individual nutrition requirements vary by individual, but are usually measured in terms of total calories. The federal government recommends that the average person consume anywhere from 1,200 to 2,800 calories per day, depending on exertion and other health considerations.³⁹¹ Based on the nutritional attributes of the meals in FEMA’s inventory, the agency uses a planning factor of two meals per person per day. As one of the initial stockpiles, the U.S. military’s MREs contain roughly 1,250 calories each, which aligns with FEMA’s planning factor.³⁹² The federal government must use caution, however, as it uses MREs; the Surgeon General

³⁸⁷ Oregon OEM, “Cascadia: Oregon’s Greatest Natural Threat,” in *The Oregon Resilience Plan: Reducing the Risk and Improving Recovery for the Next Cascadia Earthquake and Tsunami* (Salem, OR: Oregon Seismic Safety Policy Advisory Committee, February 2013), 14, http://www.oregon.gov/oem/Documents/01_ORP_Cascadia.pdf.

³⁸⁸ Oregon OEM, “Cascadia Rising,” 90, 93.

³⁸⁹ Oregon OEM, 90, 93.

³⁹⁰ Oregon OEM, 178.

³⁹¹ Barbara E. Millen, *2015–2020 Dietary Guidelines for Americans, Eighth Edition* (Washington, DC: U.S. Department of Health and Human Services and U.S. Department of Agriculture, December 2015), 20–28.

³⁹² “Meal, Ready-to-Eat,” Defense Logistics Agency, accessed June 24, 2018, <http://www.dla.mil/TroopSupport/Subsistence/Operationalrations/mre.aspx>.

policy limits MRE consumption as the sole source of calories to twenty-one days.³⁹³ FEMA can supplement MREs through a mix of other types of self-heating, shelf-stable meals. Ultimately, though, packaged and processed foods should not be a long-term solution, and the ultimate end state should be a return to hot meals, as well as fresh fruits and vegetables.

B. PLANNING AND PREPAREDNESS

FEMA's guidance for development of emergency operations plans stresses the importance of planning in preparedness. As one of its core principles, it further stresses that "Effective plans tell those with operational responsibilities what to do and why to do it, and they instruct those outside the jurisdiction in how to provide support and what to expect."³⁹⁴ FEMA, along with the state governments of California, Oregon, and Washington, as well as other federal agencies, have taken this a step further through a joint planning effort. Originally published in 2013 and updated in January 2017, the resulting product, the *CSZ Catastrophic Earthquake and Tsunami Response Plan*, "specifically outlines how the national, regional, and local resources work together to save and sustain life, and to protect property and the environment by stabilizing incident circumstances in coordination with the affected states."³⁹⁵ As Dade County, Florida, Emergency Manager Kate Hale noted (mentioned in Chapter III), this plan would serve as the agreement or "compact" between various levels of government should the CSZ scenario transpire.³⁹⁶

A key element of this planning is developing the "concept of support" for logistics commodities. Under the National Response Framework (NRF), FEMA and the U.S. General Services Administration, in coordination with other key partners, are responsible for "Emergency Support Function #7: Logistics" (ESF-7). The ESF-7 annex to the NRF makes it the responsibility of these agencies to manage "a collaborative and complex

³⁹³ U.S. Army, *Army Food Program*, AR 30-22 (Washington, DC: Department of the Army, 2012), 37.

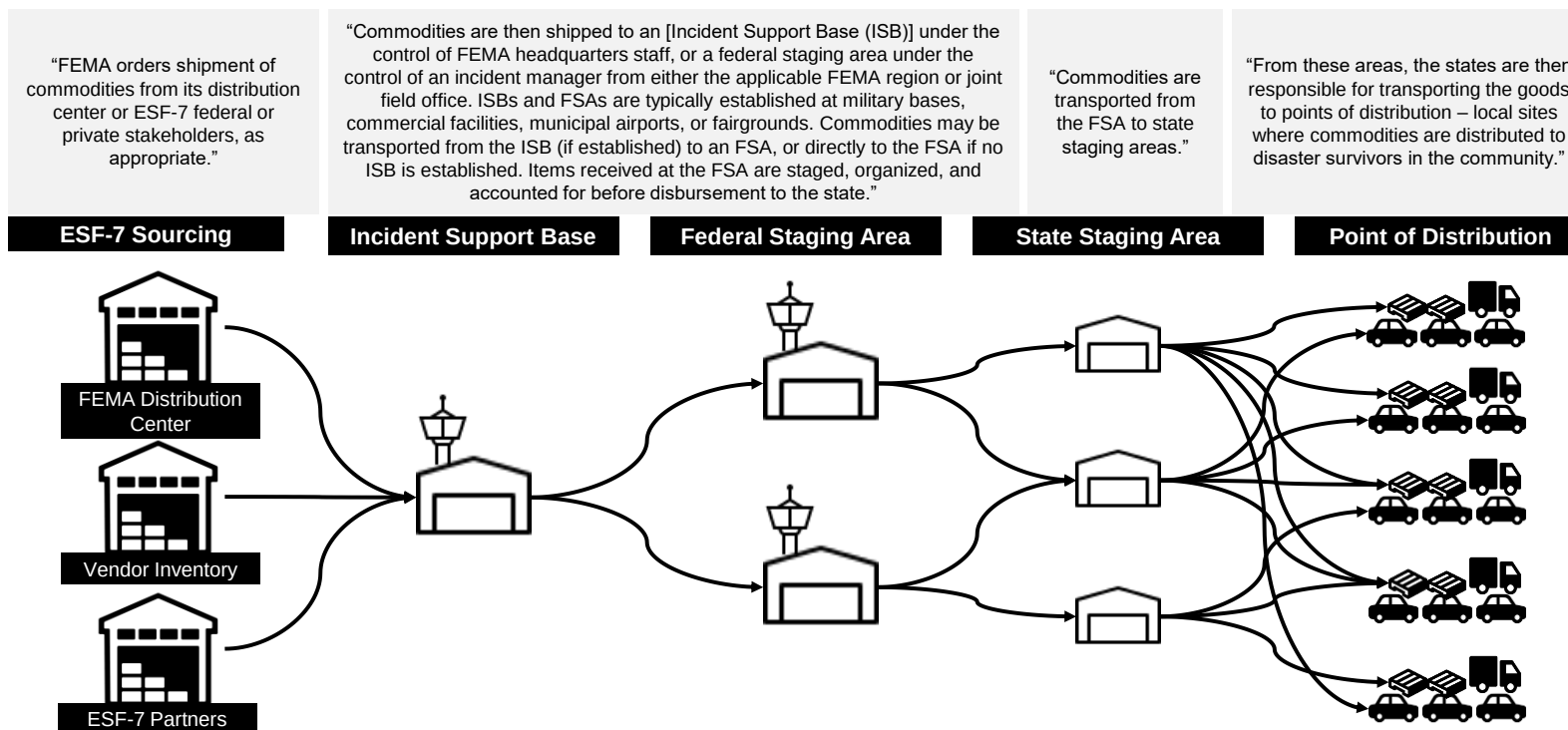
³⁹⁴ FEMA, *Developing and Maintaining Emergency Operations Plans: Comprehensive Preparedness Guide (CPG) 101*, version 2.0 (Washington, DC: Department of Homeland Security, 2010), 1–4.

³⁹⁵ FEMA Region X, *Cascadia Subduction Zone*, 21.

³⁹⁶ moviemagg, "Hurricane Andrew, We Need Help."

logistics supply chain.”³⁹⁷ FEMA and its federal ESF-7 partners are responsible for the catastrophic sourcing and strategic movement outlined in Chapter IV. Once FEMA has staged resources at federal staging locations—Incident Support Bases and Federal Staging Areas—or at State Staging Areas managed by Oregon or Washington, the water will need to be shipped onward to points of distribution (PODs) managed by local jurisdictions. PODs are where the final handoff to survivors occurs—last-mile delivery. Essentially, water and meals, as well as blankets, tarps, and other life-sustaining commodities, are arrayed in a large parking lot or other open area, with National Guard soldiers, nongovernmental organizations, or local volunteers staffing each lane. Survivors drive to these locations, identify the number of individuals in their household to POD staff, and open the trunks of their vehicles, and the staff will load the appropriate amount of commodities. Figure 2 is a depiction of the ideal logistics concept of support, adapted from a GAO report. Throughout this section, this graphic is referenced to show how the reality of logistics support diverges from conceptual plans.

³⁹⁷ FEMA, “Emergency Support Function #7—Logistics Annex” (annex, Department of Homeland Security, June 2016), https://www.fema.gov/media-library-data/1470149740861-a43de89d07026b4be5790cb20b84872c/ESF_7_Logistics_20160705_508.pdf.



(Graphic: Modified from Fig. 4, GAO-15-781)

Figure 2. Federal ESF-7 Concept of Support⁴⁰¹

⁴⁰¹ Adapted from Christopher Currie, *Emergency Management: FEMA Collaborates Effectively with Logistics Partners but Could Strengthen Implementation of its Capabilities Assessment Tool*, GAO-15-781 (Washington, DC: GAO, September 2015), 11, <https://www.gao.gov/assets/680/672413.pdf>.

As noted in the preceding chapter, federal, state, and local governments have various approaches to stockpiling in preparation for disaster. State governments like Florida stockpile food and water, while Washington and Oregon do not. When disaster strikes, this means that the federal government will likely operate under the assumption that, aside from any individual, household, or community stockpiles, FEMA and its ESF-7 partners will be responsible for providing nearly all disaster-related water and meal requirements.

1. Initial Response (Push)

a. Federal Push

This “push” model for disaster response is well established in national emergency management policies, doctrines, and contingency plans. The key issue during this phase is which individuals or communities get the initial (limited) push of water. In this phase, scarcity is a function of initial availability of bottled water; the damage to air, land, and sea transportation infrastructure; the quantity and capacity of various modes of conveyance to deliver supplies (throughput), as well as time and distance.

Hobbes, Locke, and Kant are all likely to agree that the social contract allows for some sort of government response. It is clear that Locke and Kant would support this because there is a series of laws, plans, and policies written. Hobbes would agree because there would be consequences for the government should it fail at protecting its citizens. However, the utilitarians (like Bentham and Mill) might argue, in absolute terms, that the government should not intervene in something that commerce should fix. If they considered any assistance, they might ask, “What is the expected utility”? In other words, what would the government get out of providing meals and water to survivors? Still, there are those survivors out there who would go thirsty and hungry, so the Greatest Happiness in this case—they might argue—is to provide any survivor with water and meals.

Given initial requests from the states of Oregon and Washington, as well as its own modeling, FEMA will need to determine how much water each state will receive in the first seventy-two hours (and beyond). Water and meals are life-sustaining resources and

not life-saving resources. So any need for assets like search and rescue, medical teams, or firefighting resources would be prioritized over airlift requests to move bottled water.

The closest distribution center to the incident area will be Moffett Field in Mountain View, California (see Figure 3). At any given time, Moffett could have anywhere between 500,000–750,000 liters of water and roughly a half-million meals in its inventory.⁴⁰² Trailers can typically be loaded and unloaded in about four to six hours, which adds to the total lead time for delivery.⁴⁰³ On a normal day, Moffett is approximately a seven-hour drive-time from Medford, Oregon, and thirteen hours from Seattle, Washington. The impacts of the earthquake to Interstate 5 could add an additional six to twelve hours of detour time as truck drivers are pushed east of the Cascades toward undamaged routes. The Federal Motor Carrier Safety Administration is responsible for a federal regulation that limits the hours of service for truck drivers to eleven hours per day “to avoid driver fatigue.”⁴⁰⁴ However, if FEMA directs its contractors to use team drivers, allowing driver rest, or if the Secretary of Transportation waives the hours of service regulation, the trucks can be driven directly to their destination without any stops for rest. So, assuming timely notification and mobilization of truck drivers and distribution center staff, the first sixty to seventy trucks from Moffett containing the warehouse’s entire stocks of water and food will arrive twenty-four to thirty-six hours after the earthquake. The remaining water FEMA is able to ship from its other mainland distribution centers will likely arrive by the end of seventy-two hours. Partner- and vendor-managed inventory will come in as it is produced and shipped.

⁴⁰² FEMA Logistics Management Directorate, *FEMA Logistics Readiness Report* (Washington, DC: Department of Homeland Security, March 2018).

⁴⁰³ Rafał Burdzik, Maria Cieśla, and Aleksander Ślaskowski, “Cargo Loading and Unloading Efficiency Analysis in Multimodal Transport,” *PROMET—Traffic & Transportation* 26, no. 4 (2014): 327, 328.

⁴⁰⁴ “Hours of Service of Drivers,” Federal Motor Carrier Safety Administration, December 27, 2011, <https://cms.fmcsa.dot.gov/regulations/rulemaking/2011-32696>.



Figure 3. FEMA Distribution Centers (U.S. Mainland)⁴⁰⁵

Given the proximity of the two states, and the catastrophic nature of the disaster, the exact location that some portion of the total number of meals and liters of water ship from will not initially be a significant practical dilemma forcing any major ethical choices. FEMA can rebalance water between locations and ship as needs are identified. In light of that, however, information asymmetry will be at its peak during this phase. If FEMA and the states are focused on adhering to their plans, more people can be supplied with meals and water if the resources are pushed to staging areas and PODs where it is easiest to make deliveries and closest to large impacted population centers (likely away from the coast, as roads will still be impassable). If FEMA is focused on assisting those in greatest need, it will deploy federal resources (likely via air) to coastal communities, bypassing state staging (and thus creating an issue with reimbursement). Air drops of commodities along the coast can provide water to those who need it most, but there is no guarantee about the number of survivors that actually made it to high ground. An additional issue that this poses is that in

⁴⁰⁵ Adapted from FEMA, “CONUS and OCONUS Assets,” in *Executive Guide to Domestic Incident Management and Support* (Washington, DC: Department of Homeland Security, 2017), 24.

areas where the actual need is higher than the initial push estimated, or than the supply chain can deliver within a specific timeframe, rationing will be required.

2. State Push

Washington, DC, is roughly 2,800 miles' driving distance (2,300 miles' straight-line distance) from Seattle, Washington. Intuitively, nearness is an important evaluative criterion when assessing our duty to provide aid. Harvard Professor of Philosophy Frances Kamm notes that "It is effectiveness that (causally) explains the role of distance in our intuitions."⁴⁰⁶ Regardless of whether or not we have established that effectiveness would be the same, and whether the distance is absolute or distance per se, we still perceive a distant need as less worthy. So while the federal government may have justifications for responding slowly, inadequately, or not at all, the state governments in California, Oregon, and Washington are much closer, if not also impacted themselves. Obligation is the essence of deontology. An actor is duty- or rules-bound to provide aid. Salience is "the obviousness and inescapability of noticing need."⁴⁰⁷ If we do not recognize the need and it does not make a lasting impression on us, then it is not salient. Governors, as the chief executives of their state, are responsible for the public's safety and well-being. Salem, Oregon, and Olympia, Washington, will likely experience "very strong" or "extreme" shaking. For the governors of those states, the disaster and the needs of their impacted citizens will be very salient for them. While Sacramento is unlikely to be as directly impacted by the disaster as Salem and Olympia, the impacts to citizens in California will eventually be made clear by media coverage, reports from state personnel in the area, and local jurisdictions. In a catastrophe, salience eventually becomes inescapable.

Initially, survivors will need to rely on their own supplies while state and federal water supplies are mobilized. Based on average loads for bottled water in a conventional 53-foot tractor-trailer truck, the 21.6 million liters of water needed in the first 72 hours will

⁴⁰⁶ F. M. Kamm, *Intricate Ethics: Rights, Responsibilities, and Permissible Harm*, Oxford Ethics Series (New York: Oxford University Press, 2008), 359.

⁴⁰⁷ Kamm, 356.

require more than 1,200 trailers.⁴⁰⁸ FEMA typically has between 5 to 10 million liters of water and meals each, pre-positioned in its five distribution centers on the U.S. mainland (the most likely sources for the initial push of water).⁴⁰⁹ The remaining amount would need to come from partner- or vendor-managed inventory.

In the utilitarian approach advocated by Bentham, we are focused on the triage end state of the greatest good for the greatest number. In this case, distribution will be focused on providing help to the greatest number of people; so if some communities have to be ignored and suffer, that is acceptable. Under Mill’s “rule utilitarianism,” for which fairness is a factor, PODs would be established in communities assessed to be in the greatest need, and priority of effort would be focused on those areas. If we are focused on fair allocation and judicious use of initially scarce resources, then a rationing regime will need to be implemented and strictly enforced at every POD based on some predetermined protocol (say, a planning factor of three individuals’ worth of rations per vehicle, regardless of the number of individuals in the vehicle). If a survivor request more supplies than he or she is rationed, can the National Guard soldiers or volunteers staffing the POD second-guess that individual? What if the survivor is supporting a larger family or neighborhood? Many of the POD staff could maintain implementation of such a disciplined protocol but, as human beings, some of the POD staff will likely bend and break the rules. In that case, forecasted commodity burn rates at each POD will create supply shortages and disruptions further upstream in the supply chain.

C. SUSTAINED RESPONSE (PULL)

Established contingency supply chains, as well as the reestablishment of (even limited) communications, can mature into a “pull” model, where requests from individuals and communities drive the allocation and delivery of resources. The key issue during this

⁴⁰⁸ Florida Division of Emergency Management, “Annex 11: State Logistics Response Center (SLRC) Operation Protocols” (annex, Florida Division of Emergency Management, September 8, 2016), <https://www.floridadisaster.org/Response/Logistics/documents/State%20Logistics%20Plan%20-%20Annex%2011-%20SLRC%20Operations%20Protocols%20Revised%202016.pdf>.

⁴⁰⁹ “DoD, FEMA, Other Agencies Aid Storm-affected Areas,” DoD, October 30, 2012, <http://archive.defense.gov/news/newsarticle.aspx?id=118387>.

phase is responding to emergent needs. There is a simplicity to the initial push, since it only requires a limited set of data points in order to make allocative decisions. The pull introduces a chorus of complexity, which includes not only the disaster, its impacts, and basic human needs but also the social, political, economic, and discursive frames of everyone involved (or even interested) in the incident.

As media coverage begins to show the devastation of these communities, and politicians at the federal, state, and local levels begin to hash out disagreements on a national stage, our salience increases, and our ability to ignore “the invisible multitudes” decreases.⁴¹⁰ We are no longer able to rely solely on economic and mathematical calculations to come up with an optimal approach. Albert R. Jonsen, a biomedical ethicist who coined the term “rule of rescue,” notes that “The rational effort to evaluate the efficacy and costs, the burdens and the benefits ... an effort essential to just and fair allocation—encounters the straitened confines” of that rule.⁴¹¹ In the second state of nature following disaster, individuals are not only free, they are facing exhaustion and critical-incident stress. So there is logic in arguing that this second state of nature is a Hobbesian state of anarchy. In such a state, water and meals are allocated and distributed in a competitive environment, where the first requestor or recipient gets the most and those who are passive or silent get nothing. The individual or community best able to exploit this state of nature is able to hoard water and meals for their own benefit. If one believes that a Lockean state of nature will exist, water would be allocated based on a mutual exchange of information in order to reduce the information asymmetry. This view would assume that communities are negotiating in good faith with the state, and each state, in turn, is negotiating in good faith with the federal government.

In the hardest-hit areas, regardless of the expected effectiveness of response actions, the salience of need will create an imperative to do something. So, if we choose the Lockean view of nature, we must also assume that the state and federal government are unable to get in touch with many coastal communities because their communications, and

⁴¹⁰ Jonsen, “Bentham in a Box,” 174.

⁴¹¹ Jonsen, 174.

many of their professional responders, are incapacitated. However, the social contract still applies. Congress has stressed the importance of taking initiative in speeding aid to those in need. The scientific data provided by the U.S. Geological Survey and the National Ocean and Atmospheric Administration on the earthquake and tsunami, respectively, will quickly alert authorities at the state and federal level that those areas will have the greatest need.

U.S. Geological Survey Research Geographer Nathan J. Wood developed a cluster-based analysis which could be useful for initial community-based allocative decisions.⁴¹² In Wood's research, while some communities would be impacted by both the earthquake and tsunami, the geography of specific communities would not allow their residents to safely evacuate in time. Similar to medical triage, these classes could help with prioritization of specific needs for specific community clusters. In some cases, where survival rates are expected to be low, those communities could be deprioritized in order to focus on communities where survival was more likely. In those cases, even with ingress restricted by transportation infrastructure damage, priority areas such as tsunami evacuation zones could be targeted for commodity delivery. Additional refinement of Wood's methodology could include total population expected to survive in a given area. The surviving population number would drive the required amounts of meals and water, as well as areas where residents are particularly vulnerable in a feeding and hydration context (such as children, the elderly, and those with existing medical conditions).

Any existing plans to deliver food and water to specific facilities assume that the facility will still be there. Along the Oregon coastline, towns will be cut off as earthquake-induced liquefaction and the force of the tsunami wave wash away roads. In western Washington, island communities in the Puget Sound and the Strait of San Juan de Fuca will be isolated as ferry terminals and bridges are damaged or destroyed. Wood notes that Seaside, Oregon, has the highest vulnerability for "[business] customers, dependent-care populations, tourists, and employees."⁴¹³ While Wood intended for his analysis to be used

⁴¹² Nathan J. Wood, "Community Clusters of Tsunami Vulnerability in the U.S. Pacific Northwest," *Proceedings of the National Academies of Sciences (PNAS)* 112, no. 17 (April 28, 2015): 5354–5359, <http://www.pnas.org/content/112/17/5354.full.pdf>.

⁴¹³ Wood, 5358.

for natural hazards risk reduction, not necessarily as a triage tool during disaster response, his work provides a useful foundation for practical course-of-action analysis and comparison. FEMA's joint plan with Oregon and Washington for CSZ response lists more than 50 potentially isolated communities along the coasts of Oregon and Washington, with 231 potential assembly areas (or drop zones). The populations of these towns range from less than one hundred people to tens of thousands.⁴¹⁴ The geometric growth of the logistical challenge to ensure last-mile delivery of supplies quickly becomes overwhelming.

Seaside and its neighbor, Gearhart, Oregon, have nine assembly areas between them, outside the hazard area of a local tsunami.⁴¹⁵ As residents are able to evacuate to these assembly areas, they will become the most practical location to deliver supplies to the highest number of survivors. This will, at least initially, require helicopters and other aircraft to support deliveries and air-drops, similar to the Florida and Puerto Rico examples discussed in Chapter IV. The U.S. Army's CH-47 helicopter—also known as the Chinook—is limited to carrying 16,000 pounds of cargo.⁴¹⁶ The U.S. Navy's CH-53 helicopter—also known as the Sea Dragon—can carry up to 33,000 pounds of cargo.⁴¹⁷ The average pallet of water, containing roughly 900–1,000 liters of water, weighs around 2,500 pounds. Oregon, Washington, and California all have access to CH-47s within their Army National Guard units, and can rapidly employ them to deliver food and water (provided they are not supporting other priority missions). The states will have to wait until federal military forces can be activated and move into the area to take advantage of the greater lift capability of the CH-53, doubling the amount of water that can be carried on a single flight. However, with towns like Seaside, where the population is roughly 6,500, this will still require several flights a day in order to meet minimal requirements for

⁴¹⁴ FEMA Region X, *Cascadia Subduction Zone*, 551–620.

⁴¹⁵ "Tsunami Evacuation Map: Seaside & Gearhart, Oregon," Oregon Department of Geology and Mineral Industries, June 3, 2013, http://www.oregongeology.org/pubs/tsubrochures/SeasideGearhartEvacBrochure-6-3-13_onscreen.pdf.

⁴¹⁶ "CH-47 Chinook Helicopter," U.S. Army, November 4, 2014, https://www.army.mil/article/137584/ch_47_chinook_helicopter.

⁴¹⁷ "United States Navy Fact File: MH-53E Sea Dragon Helicopter," U.S. Navy, March 6, 2017, http://www.navy.mil/navydata/fact_display.asp?cid=1200&tid=400&ct=1.

drinking water (not accounting for meals or water for other uses). Naturally, larger towns will require more frequent flights and smaller towns might require resupply flights every few days. Barges and ferries can deliver even more supplies to coastal communities, but damage to local fleets will require moving them from other locations. Additionally, potential landing sites will need to be engineered to allow for the efficient offloading of supplies; otherwise, the time commitments for these vessels at each location will reduce the total number of towns they can support in a given timeframe.

Instead of shipping packaged water, the military has water purification equipment. The most common of these systems is known as the reverse osmosis water purification unit (ROWPU). The ROWPU and other military water purification units can take surface, ground, and seawater and process it into drinking water—anywhere from 300 to 30,000 liters of water per hour.⁴¹⁸ So water will not have to be shipped into isolated communities, and local distribution can be handled by the relatively small number of military personnel deployed to operate these systems. While these personnel can bring enough food and water to sustain themselves, these systems will require a significant logistical tail. The need for filters, treatment chemicals, and fuel to power the pumps could grow even larger than simply shipping water into the area. Additionally, while these systems can provide water, meals will still need to be shipped in on a regular basis.

These are all resource-intensive propositions. They also serve to distract from the larger impacted population along the Interstate 5 corridor, who will require sustained assistance. As one alternative, those same aircraft or ferries could be used to transport individuals from those assembly areas along the coast to locations further away from the disaster area. While this may be suggested by the state or federal government to reduce the requirements on their resources, it may not be preferred at the individual or community level. Local political leadership, through the media, could take issue with a general evacuation of the population. It is also understandable that, in the short term, residents would prefer to stay, in order to protect their property. In these evacuation areas, where—

⁴¹⁸ U.S. Army, *Water Planning Guide* (Fort Lee, VA: U.S. Army Combined Arms Support Command, November 2008), “[http://www.quartermaster.army.mil/pwd/publications/water/Water_Planning_Guide_rev_103008_dtd_Nov_08_\(5-09\).pdf](http://www.quartermaster.army.mil/pwd/publications/water/Water_Planning_Guide_rev_103008_dtd_Nov_08_(5-09).pdf).”

at the very least—ground transportation can provide semi-regular resupply, individuals can be more easily supported than those in remote, isolated communities. However, as land use planner Chuck Perino notes, specifically with regard to Seaside, historic disaster examples show “extended time in evacuation areas led to a sense of abandonment in evacuees leading to a lagging recovery of those cities.”⁴¹⁹ This is utilitarianism in conflict with itself—draining a vibrant coastal community of the foundations of its long-term economic recovery in an attempt to save money and resources during the response phase. The solution here is not clear, and a simple cost-benefit calculation is not the answer.

D. THE SCALING BACK

As roads are cleared and other transportation networks are brought back online, the life-saving, life-sustaining phase of disaster relief begins to wind down. While this could be days or weeks in some areas, some of the hardest-hit communities will not experience this for months, or even years, if at all. As lessons from Puerto Rico have demonstrated, ethical choice is not an issue solely in the provision of meals and water but also in the cessation of government-provided relief. On one end of the spectrum, the state or federal government could have cut off supplies to the worst-impacted communities early on in the response. In the utilitarian sense, these communities could be considered not worth saving, given the amount of resources required and the time period for which they will require sustainment. On the other end of the spectrum, government can create an enduring entitlement, whereby certain communities will continue to receive water and meals. There is also a middle ground, which I will refer to as “the scaling back.”

The essential pillars of any economy are supply and demand; this phase is concerned with finding equilibrium between the two. As the supply-side returns, grocery stores, big-box stores (e.g., Walmart and Target), warehouse club stores (e.g., Sam’s Club and Costco), and pharmacies will all reengage the normal supply chain. As the demand side returns, electricity and communications are sufficient to enable the return of evacuated

⁴¹⁹ Charles S. Perino, “Should We Stay or Should We Go Now? The Physical, Economic, Geopolitical, Social and Psychological Factors of Recovery from Catastrophic Disaster” (master’s thesis, Naval Postgraduate School, 2014), 95, <https://www.hsdl.org/?view&did=760183>.

residents, and ATMs, banks, and other payment methods allow individuals to purchase goods on the normal economy. Also closely linked to the ability to pay is the return of local employers, and their ability to pay their employees. The key issue during this phase is deciding which individuals or communities no longer need contingency water and meals. Individuals and communities could attempt to game the system, requesting more supplies than they actually require. From the perspective of local, state, or federal governments assessing the continued need to provide meals and water, these supply and demand factors should be assessed alongside any continued demand signal for additional relief commodities.

Tap water and bottled water are supplementary goods. As water systems come back online and are safe to drink from, some communities will no longer have a contingency hydration need. If a household normally gets most of its drinking water from the tap but the water system has not fully returned to its pre-event operating status, they can purchase bottled water at a pharmacy, grocery, or big-box store, as long as they have the financial means. Food and water supplies will need to be looked at separately, with an understanding that the two are connected to one another and are often linked to the restoration of other utilities like gas and electricity.

If there is a conflict between the supply and demand assessment of the local economy (the economy is returning to a functional status) and requests for relief commodities, one approach might be to cut off or reduce the distribution of meals and water to communities assessed as no longer needing water in order to focus on communities with greater needs. However, this approach assumes an even exchange of information and understanding of the community's economic situation. If we assume that information asymmetry still persists, there may be some communities that say they still need water and meals. If we are following our concept of support, they should still continue to get water, in accordance with the original plan. There might be something that the state or federal government does not know that the individual or local community knows about their unique circumstances.

VI. CONCLUSION

“Would you tell me, please, which way I ought to go from here?”

“That depends a good deal on where you want to get to,” said the Cat.

“I don’t much care where—” said Alice.

“Then it doesn’t matter which way you go,” said the Cat.

“—so long as I get somewhere,” Alice added as an explanation.

“Oh, you’re sure to do that,” said the Cat, “if you only walk long enough.”

—Lewis Carroll, *Alice’s Adventures in Wonderland*⁴²⁰

A. THE PARADOX OF THE SECOND STATE OF NATURE

If we understand that different ethical approaches will all be used simultaneously by the various actors involved in disaster response, then we also understand that a truly common approach to ethics is impossible. Aquinas advocates virtue to avoid evil, but if evil is not part of your truth (or understanding), then it is impossible to avoid. Kant advocates that we establish rules, but those are only binding insofar as individuals and groups follow them. Hobbes and Bentham advocate that we need only understand that there are consequences for our actions, but also that we can do bad things to get to something good. I argue that these philosophies can all peacefully coexist since they are all focused on the singular practical manifestation of a behavior that aims at some good. Therefore, as emergency managers, we must remain neutral in this timeless debate. If we are only focused on behaviors, and we know that behaviors are influenced by common sense, consequence, or conversion, then those become the three ways to drive change. These cannot, although the literature tends to do so, be separated into discrete thought experiments. In a pluralistic society, where we have rules but also want to believe in heroes that will bend or break those rules to come to our aid, we are already awash in ethical conflict. We must appeal to individuals’ and groups’ low-road ethics that bad behavior

⁴²⁰ Lewis Carroll, *Alice’s Adventures in Wonderland* (Chicago: Belford, Clarke & Co, 1890), <https://www.gutenberg.org/files/11/11-h/11-h.htm>.

results in bad outcomes, while at the same time appealing to their virtue- and rules-based high-road ethics.

As Naomi Zack notes, we have left the original position behind, so are no longer in the original state of nature. The second state of nature created by disaster, she asserts, is not viable in modern society over a sustained period without government.⁴²¹ But one can easily imagine some distant bureaucrat parsing out meals and water like some unfeeling machine. Some clerk, with no understanding of the dire situation in which you remain, has assessed that you are perfectly able to procure your own food and water. In one reality, you are perfectly fine to hunt, gather, forage, and buy provisions on your own, and you have simply been hoarding government commodities (perhaps out of fear of additional aftershocks, or out of sheer selfishness). In an alternate reality, the big data crunching of some faceless bureaucracy has ignored that you are an outlier that still has needs. In both situations, the decision seems arbitrary and unfair. Where was the due process? Who is this unelected cog in some big machine to turn off the taps on me, a citizen?

Our preference for the natural over the synthetic is hardwired into our intuition—our fight or flight instinct that protects us from danger. Disaster has a way of wresting away the measure of control we feel that we have over our daily lives, raising within us a sense of dread. As Kierkegaard notes, we can allay that dread through faith, whether it is through faith in God or faith in the higher power of the social contract that defines a society.⁴²² The original basis of the social contract is that we cede some measure of freedom to a government in exchange for protection. After a disaster, seeking some level of assistance to regain that control is natural. It is part of what makes humans social animals. So if that assistance were to go on long enough, the fear that that same distant bureaucracy will continue to have control over our lives indefinitely only serves to increase our sense of despair. Devolution of responsibilities to the local level, and ultimately to the individual, is critical to the fabric of our social contract. This is the only way to create ownership in our deliberative democracy, and provide each survivor with the right to become agents in

⁴²¹ Zack, *Ethics for Disaster*, 74–75.

⁴²² Kierkegaard, *The Concept of Dread*.

their own recovery. If there is no discussion of responsibility in the supported population, they are not survivors, they are victims.

While forsaking responsibilities may not, in the strict legal sense, constitute a violation of another's rights, the science of scarcity tells us that the potential for moral hazard in disaster relief is an initial peril for those who do not stockpile. There is consistent public messaging that households should stockpile enough food and water for every individual for the first three days after disaster strikes. However, the concept of stockpiling for weeks or months at a time is not something that is often considered or advised for the average American. The long-term drain on federal resources, while less likely, generates a greater strain on scarce national assets than providing some nominal amount of commodities for a few days. At a certain point, continued aid from the government reaches a tipping point of unfairness. If equity is the goal, how the survivors feel about the effectiveness of the response is just as important as a quantification of the resources actually provided. An institution may perceive that a survivor does not need, but merely wants, continued aid. However, that survivor may still believe he or she has a need for food or water.

The discussion in the media will drive the conversations of those directly impacted, giving a chorus of distant critics a say over previously provincial objects. For those not directly impacted, the discussion in the media will drive how they judge fairness. After all, a catastrophe could happen to them too. As emergency managers, we do not have a crystal ball with which to predict the outcomes of the decisions we make. The best we can do is develop an ethical protocol that is defensible in an environment of uncertainty. So the scale is a balancing act between empathy (the basis for Rawls's "original position") and an indifference driven by the perception that another is in breach of the social contract (and so is entitled to the consequences). If that tipping point is reached, it is up to the political level (and ultimately the electorate) to decide how to correct any imbalance—perceived or actual. The dialectic between the physical and the metaphysical is what drives us down the path in our search for a more common, ethical approach.

B. RECOMMENDATIONS

Despite that seemingly anticlimactic conclusion, there are concrete steps that the disaster response community can undertake to achieve progress in this search.

1. Rethink Our Preparedness Campaigns

Current individual and community preparedness guidance on the FEMA-run Ready.gov website is focused on helping people develop checklists for stockpiling specific items. Prospect theory and choice architecture tell us that people are much more willing to take risks (by spending money upfront to prepare) if you tell them what they would otherwise lose. Citizens should be reminded that in the hardest-hit areas, it will be difficult to sustain them for the extended period of time they will require support. FEMA's standard advice to have at least three days' of food and water applies to an average disruption like a snowstorm, but catastrophes are not average. The messaging for Ready.gov should be reconfigured in a way that is relevant to the specific issues that a community might face after various types of disasters. Using a tool like Wood's cluster-based analysis, messaging can be targeted to the hazard-specific impacts faced by different communities, and tailored to their demographics.

Once the hazard-specific impacts are understood, the appeal can be customized. An appeal based on prospect theory to coastal communities could become relatively blunt: "The government will support you, but it is not going to be timely, nor are the commodities it provides you going to be based on your preferences. If you do not stockpile the food that you prefer to eat, then the government will be making that choice for you." In addition, FEMA only mentions collecting rainwater under its "Drought" page on Ready.gov.⁴²³ The Pacific Northwest is a relatively damp climate; for those with the means, systems for catching, filtering, treating, and storing rainwater could serve to increase individual and household resilience for all hazards. So it would make sense to include such messaging for other hazards, like earthquakes, as well.

⁴²³ "Drought," Department of Homeland Security, accessed January 15, 2018, <https://www.ready.gov/drought>.

2. Integrate Design Thinking into Disaster Planning at All Levels

Domestic disaster relief demands that the user perspective from which we design our plans must incorporate a degree of empathy with each and every individual citizen. This helps to reinforce the social contract and also provides a unique way to engage citizens. Tim Brown, an industrial designer and head of Silicon Valley design firm IDEO, notes that design begins where any planning begins—matching human needs to available resources, and ordering them in time and space. He continues that the basis for design thinking is “our ability to be intuitive, to recognize patterns, to construct ideas that have emotional meaning as well as functionality,” and cautions against relying too much on rationality or analysis.⁴²⁴ While this empathetic approach may seem to contradict Rawls’s “veil of ignorance,” redesigning disaster planning should not fundamentally alter the principles of justice we adopted in the original position.

The focus in redesigning operational plans centers on the practical implementation of those principles by the bureaucracy. Additionally, interactive and iterative citizen and community outreach reinforces basic ethical principles, and also encourages empathy through exposure to varying perspectives. One example of this was a project in Maryland to achieve community-based consensus on the just and fair allocation of ventilators, a limited medical resource.⁴²⁵ Consistent with Rawls’s concept of justice as fairness, and Freeman’s assertion that deliberative democracy is the practical way to pursue this end, researchers held several community meetings across the state to seek input on the most appropriate allocative methods. It is not necessarily Rawls’s “perspective of eternity,” but within the scope of a tuberculosis outbreak across the state of Maryland, consideration of a variety of viewpoints makes progress toward that end.

During the recovery from Hurricane Sandy, FEMA deployed industrial designers as part of its Innovation Team, which redesigned the “survivor experience” in registering

⁴²⁴ Tim Brown and Barry Katz, *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation* (New York: HarperCollins e-books, 2009), 3.

⁴²⁵ Elizabeth Lee Daugherty, “Too Many Patients, Too Few Resources,” Johns Hopkins Berman Institute of Bioethics, accessed January 30, 2018, <http://www.bioethicsinstitute.org/scarcemed>.

for disaster assistance at disaster recovery centers.⁴²⁶ As one designer noted, redesigning that experience told the survivor, “‘We’ve got it all planned out for you. Just move through the system and we’ll take care of you.’ Whereas makeshift versions ... only [enhance the] anxiety you have coming out of a disaster situation.”⁴²⁷ In the second state of nature created by disaster, decreasing that sense of dread is essential to both the actual relief provided by government—the survivors’ perception of the effectiveness of that relief—as well as society’s perception of effectiveness.

3. Reinvigorate and Redesign the Civil Defense Warden System

Local government is closest to the people and thus most capable of helping them prepare for disaster. The federal and state governments do not have the resources or intimacy with the individual citizen that local and sub-local leaders enjoy. Community Emergency Response Teams (CERTs) fulfill a part of this role, but are community-based and voluntary, which makes for inconsistencies in capabilities across the country.⁴²⁸ The concept of the “warden service,” while similar to the CERT concept in terms of capability as a “first-aider,” differs in that the members of the service would be “properly selected and trained.”⁴²⁹ Organized under jurisdictional (county and municipal) emergency managers, these individuals would have areas of responsibility consisting of a manageable number of households, consistent with Jefferson’s vision of a ward-republic. In order to counteract the issues of trust described by Kahneman, these wardens would be trained in assessing community risk, understanding community threats and hazards, and implementing mitigation, protection, and intervention activities. Rather than the artificiality of receiving information of questionable veracity on the internet, through mass media, or by word of mouth, the warden becomes a natural mode of trust for those in his or her ward.

⁴²⁶ Kyle Vanhemert, “FEMA Enlists Designers to Rethink Disaster Relief,” *Wired*, February 6, 2014, <https://www.wired.com/2014/02/fema-frog-teamed-redesign-disaster-relief/>.

⁴²⁷ Vanhemert.

⁴²⁸ “Community Emergency Response Teams,” Department of Homeland Security, accessed January 15, 2018, <https://www.ready.gov/community-emergency-response-team>.

⁴²⁹ Russel J. Hopley, *Civil Defense for National Security: Report to the Secretary of Defense* (Washington, DC: DoD, 1948), <https://fas.org/irp/agency/dhs/fema/civildef-1948.pdf>.

4. Consider Making Exceptions to the Rule: The Rules in Catastrophes

While many one-off solutions or innovations during past disasters have been applied on more than one event, they continue to be framed by political leaders and the media as simply cutting through red tape. Emergency plans are often referred to as fantasy documents because they assume a degree of predictability and control during response that is never achieved.⁴³⁰ Plans need to be developed that assume that existing rules, policies, or practices will be waived, exempted, or simply ignored. The Response Federal Interagency Operational Plan (FIOP) provides a list of regulatory waivers, emergency permits or exemptions, and exceptions that can be invoked during response by Emergency Support Function, aligned to each federal department and agency.⁴³¹

State and local planners could benefit from a similar cataloguing of waivers and exemptions. Additionally, while the Response FIOP identifies exceptions to the rules, it is still heavily focused on cataloguing resources, authorities, and policy statements theorizing operational approaches. Instead, the plan should reflect more courses of action, or “plays,” that have been used successfully in past disasters, laying out both practical and ethical risks, with a menu of options for policy changes (or, in extreme circumstances, changes to law during the crisis). Through indexing waivers, exemptions, exceptions, and the litany of practical and ethical pitfalls facing specific operational approaches, emergency plans could provide officials with broader decision-making authority, but also retain guardrails that reflect hard limits on ethical values. In peacetime, they can also provide a useful plan of action to remove potential obstacles before they become real obstacles.

Exceptions will also need to be framed in terms of what the negative outcomes could be, as much as any recommendation is focused on the beneficial outcomes. Considering prospect theory here, there needs to be a balance between loosening up policies that expose government officials and institutions to greater risk, while at the same time looking at the risk to the survivor for making or not making a specific decision. While

⁴³⁰ Clarke, *Mission Improbable*.

⁴³¹ FEMA, *Response Federal Interagency Operational Plan*, second edition (Washington, DC: Department of Homeland Security, August 2016), 17, https://www.fema.gov/media-library-data/1471452095112-507e23ad4d85449ff131c2b025743101/Response_FIOP_2nd.pdf.

the Response FIOP itself remains nearly 400 pages long (only covering federal actions), the waivers and exemptions could be referenced in less than three pages. So, in addition to injecting more reality and less fantasy into operational plans, we also need to drastically shorten their length. Voluminous plans are inaccessible to all except those who wrote them, or who have the time to peruse them. In response, where time and initiative are the watchwords, it is unreasonable to expect officials to comb through hundreds of pages to extract essential information.

LIST OF REFERENCES

- Adams, J. Stacy “Towards an Understanding of Inequity.” *The Journal of Abnormal and Social Psychology* 67, no. 5 (November 1963): 422–436. <http://dx.doi.org/10.1037/h0040968>.
- Aesop. “The Ants & The Grasshopper.” In *The Aesop for Children*. Library of Congress, accessed October 13, 2017, <http://read.gov/aesop/052.html>.
- Akerlof, George. “The Market for Lemons.” *Quarterly Journal of Economics* 84, no. 3 (1970): 488–500.
- Annas, George J. “The Prostitute, the Playboy, and the Poet: Rationing Schemes for Organ Transplantation.” *American Journal of Public Health* 75, no. 2 (1985): 187–189.
- Appadurai, Arjun. *The Social Life of Things: Commodities in Cultural Perspective*. Cambridge: Cambridge University Press, 1986.
- Aquinas, St. Thomas. “Whether Grace Is Fittingly Divided into Operating and Cooperating Grace?” In *Summa Theologica*. Christian Classics Ethereal Library, 2005. http://www.ccel.org/ccel/aquinas/summa.FS_Q94_A2.html#FS_Q94_A2-p7.http://www.ccel.org/ccel/aquinas/summa.FS_Q111_A2.html?highlight=double%20effect#highlight
- . “Whether the Natural Law Contains Several Precepts, or Only One?” In *Summa Theologica*. Christian Classics Ethereal Library, 2005. http://www.ccel.org/ccel/aquinas/summa.FS_Q94_A2.html#FS_Q94_A2-p7.
- Aristotle. *Nichomachean Ethics*. Translated by H. Rackham. Cambridge, MA: Harvard University Press, 1934. <http://data.perseus.org/citations/urn:cts:greekLit:tlg0086.tlg010.perseus-eng1:1094a>.
- Bagehot, Walter. *The English Constitution*, 2nd ed. McMaster University, accessed June 21, 2018. <https://socialsciences.mcmaster.ca/econ/ugcm/3ll3/bagehot/constitution.pdf>.
- Baker, Tom, and David Moss. “Government as Risk Manager.” In *New Perspectives on Regulation*, edited by David Moss and John Cisternino, 87–109. Cambridge, MA: Tobin Project, 2009.
- Barrett, Ted. “FEMA’s Brown Puts Blame on Louisiana Officials.” CNN, September 28, 2005. <http://www.cnn.com/2005/POLITICS/09/28/katrina.brown/index.html>.
- Bentham, Jeremy. *The Works of Jeremy Bentham*, vol. 1. Edinburgh: William Tait, 1843. <http://oll.libertyfund.org/titles/bentham-the-works-of-jeremy-bentham-vol-1>.

- Berger, Peter L., and Thomas Luckman. *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. New York: First Anchor Books, 1967.
- Bernays, Edward. *Propaganda*. Brooklyn, NY: Ig Publishing, 2005.
- Bessette, J.M. “Accountability: Political.” In *International Encyclopedia of the Social & Behavioral Sciences*, edited by Neil J. Smelser and Paul B. Baltes, 38–41. Elsevier, 2001. <https://doi.org/10.1016/B0-08-043076-7/01091-3>.
- Boin, Arjen, and Paul ‘t Hart. “Aligning Executive Action in Times of Adversity: The Politics of Crisis Co-ordination.” In *Executive Politics in Times of Crisis*, edited by Martin Lodge and Kai Wegrich, 179–196. London: Palgrave Macmillan, 2012. doi:10.1057/9781137010261_10.
- Boin, Arjen, Paul ‘t Hart, Eric Stern, and Bengt Sundelius. *The Politics of Crisis Management: Public Leadership under Pressure*. New York: Cambridge University Press, 2005.
- Boulding, Kenneth E. *Conflict and Defense: A General Theory*. New York: Harper & Brothers, 1962.
- Bovard, James. “Dear Texas, How Many Times Do We Have to Rebuild the Same House? (You’re Next Florida).” USA TODAY, September 1, 2017. <https://www.usatoday.com/story/opinion/2017/09/01/harvey-proves-flood-subsidies-must-end-james-bovard-column/619926001/>.
- Brock, D., and Daniel Wikler. “Ethical Issues in Resource Allocation, Research, and New Product Development.” In *Disease Control Priorities in Developing Countries*, 2nd ed., edited by Dean T. Jamison, Jeol G. Breman, Anthony R. Measham, George Alleyne, Mariam Claeson, David B. Evans, Prabhat Jha, Anne Mills, and Philip Musgrove. New York: Oxford University Press, 2006.
- Brown, Jared T. *Deployable Federal Assets Supporting Domestic Disaster Response Operations: Summary and Considerations for Congress*. Washington, DC: Congressional Research Service.
- Brown, Tim, and Barry Katz. *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. New York: HarperCollins e-books, 2009.
- Brubaker, Magen. “Q&A with Former FEMA Administrator Craig Fugate.” WUFT, September 29, 2017. <https://www.wuft.org/news/2017/09/29/qa-with-former-fema-administrator-craig-fugate/>.
- Bunge, William. “The Structure of Contemporary American Geographic Research.” *The Professional Geographer* 13, no. 3 (1961), 19–23.

- Burdzik, Rafał, Maria Cieśla, and Aleksander Sładkowski. "Cargo Loading and Unloading Efficiency Analysis in Multimodal Transport." *PROMET—Traffic & Transportation* 26, no. 4 (2014): 323–331.
- Bush, Jeb. "Think Locally on Relief." *Washington Post*, September 30, 2005. <http://www.washingtonpost.com/wp-dyn/content/article/2005/09/29/AR2005092901636.html>.
- Caccamese, Andrea, and Damiano Bragantini. "Beyond the Iron Triangle: Year Zero." Paper presented at the PMI Global Congress, Marsailles, France, 2012. <https://www.pmi.org/learning/library/beyond-iron-triangle-year-zero-6381>.
- Carroll, Lewis. *Alice's Adventures in Wonderland*. Chicago: Belford, Clarke & Co, 1890. <https://www.gutenberg.org/files/11/11-h/11-h.htm>.
- Centers for Disease Control and Prevention. "Measuring Healthy Days: Population Assessment of Health-Related Quality of Life." Report, Centers for Disease Control and Prevention, 2000.
- Chen, David W. "Hurricane Sandy's Red Tape Makes a Veteran Say, 'I'd Rather Go Back to Falluja.'" *New York Times*, August 18, 2015. https://www.nytimes.com/2015/08/19/nyregion/victims-of-hurricane-sandy-desperate-to-move-on-weigh-reopening-claims.html?_r=0.
- Chen, Injazz J., and Antony Paulraj. "Towards a Theory of Supply Chain Management: The Constructs and Measurements." *Journal of Operations Management* 22, no. 2 (2004): 119–150. doi.org/10.1016/j.jom.2003.12.00.
- Choi, David. "'We Are Dying': Puerto Rico Mayor Says the Island Is 'Inching Close to a Genocide.'" *Business Insider*, September 29, 2017. <http://www.businessinsider.com/puerto-rico-crisis-hurricane-maria-san-juan-mayor-2017-9>.
- Choudhury, Zahidul Arefin. "Politics of Natural Disaster: How Governments Maintain Legitimacy in the Wake of Major Disasters, 1990–2010." PhD thesis, University of Iowa, 2013. <http://ir.uiowa.edu/etd/1566>.
- Clarke, Lee. *Mission Improbable: Using Fantasy Documents to Tame Disaster*. Chicago: University of Chicago Press, 1999.
- Clausewitz, Carl von. *On War*. Translated by Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1993.
- Clean Water Action. "Water." Accessed December 1, 2017. <http://www.cleanwateraction.org/our-priorities/water>.

- Coase, Ronald H. "The Nature of the Firm." *Economica* 4, no. 16 (November 1937): 386–405.
- Cohen, Shawn. "Puerto Rico Relief Effort Brings ICE, National Guard Together." *New York Post*, October 25, 2017. <https://nypost.com/2017/10/25/puerto-rico-relief-effort-brings-ice-national-guard-together/>.
- Confucius. *The I Ching: The Book of Changes*, 2nd edition. Translated by James Legg. Minneola, New York: Dover Publications, 1963.
- Coram, Robert. *Boyd: The Fighter Pilot Who Changed the Art of War*. New York: Back Bay Books/Little, Brown, 2004.
- Costello, Jeff. "Photos Capture Obliterated Homes, Resilient Survivors in Irma-Slammed Florida Keys." ABC News, September 13, 2017. <http://abcnews.go.com/US/photos-capture-obliterated-homes-resilient-survivors-irma-slammed/story?id=49834174>.
- C-SPAN. "Federal Response to Hurricane Katrina, Morning." Video, September 27, 2005. <https://www.c-span.org/video/?189060-1/federal-response-hurricane-katrina-morning>.
- Currie, Christopher. *Emergency Management: FEMA Collaborates Effectively with Logistics Partners but Could Strengthen Implementation of its Capabilities Assessment Tool*. GAO-15-781. Washington, DC: GAO, September 2015. <https://www.gao.gov/assets/680/672413.pdf>.
- Daugherty, Elizabeth Lee. "Too Many Patients, Too Few Resources." Johns Hopkins Berman Institute of Bioethics, accessed January 30, 2018. <http://www.bioethicsinstitute.org/scarcemed>.
- Davis, Aaron C., and Jack Gillum. "Trump Nominee for U.N. Migration Post Called Muslims Violent, Christians Top Priority." *Washington Post*, February 3, 2018. https://www.washingtonpost.com/investigations/trump-nominee-for-un-migration-post-called-muslims-violent-christians-top-priority/2018/02/03/a1c99c50-0851-11e8-b48c-b07fea957bd5_story.html?utm_term=.c69641244bcf.
- Dawes, Robyn M. "The Robust Beauty of Improper Linear Models in Decision Making." *American Psychologist* 34 (1979): 571–582. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.188.5825&rep=rep1&type=pdf>.
- Defense Acquisition University. "Supply Chain and the 'Last Tactical Mile.'" Accessed October 14, 2017. http://icatalog.dau.mil/mobile/CLL037/DAU_Supply_Chain_Atlas/010125/010125000060.html.
- Defense Logistics Agency. "Meal, Ready-to-Eat." Accessed June 24, 2018. <http://www.dla.mil/TroopSupport/Subsistence/Operationalrations/mre.aspx>.

- Dembe, Allard E., and Leslie I. Boden. "Moral Hazard: A Question of Morality?" *New Solutions: A Journal of Environmental and Occupational Health Policy* 10, no. 3 (2000): 257–279. doi.org/10.2190/1GU8-EQN8-02J6-2RXX.
- Department of Defense (DoD). "DoD, FEMA, Other Agencies Aid Storm-affected Areas." October 30, 2012. <http://archive.defense.gov/news/newsarticle.aspx?id=118387>.
- . "Mission." January 27, 2017. <https://www.defense.gov/About/>.
- Department of Homeland Security. "Community Emergency Response Teams." Accessed January 15, 2018. <https://www.ready.gov/community-emergency-response-team>.
- . "Drought." Accessed January 15, 2018. <https://www.ready.gov/drought>.
- . *2017 National Preparedness Report*. Washington, DC: DHS, October 2017. <https://www.fema.gov/national-preparedness-report>.
- . *National Incident Management System (NIMS)*. Washington, DC: Department of Homeland Security, 2008.
- . "Stop the Bleed." Last modified June 7, 2018. <https://www.dhs.gov/stopthebleed>.
- . *Water and Wastewater Systems Sector-Specific Plan*. Washington, DC: Department of Homeland Security, Environmental Protection Agency, 2015. <https://www.dhs.gov/sites/default/files/publications/nipp-ssp-water-2015-508.pdf>.
- Department for International Development. *Promoting Innovation and Evidence-Based Approaches to Building Resilience and Responding to Humanitarian Crises: A DFID Strategy Paper*. London, Department for International Development, 2012. <http://reliefweb.int/sites/reliefweb.int/files/resources/prom-innov-evi-bas-app-build-res-resp-hum-cris.pdf>.
- Donahue, Donald A., Stephen O. Cunnion, Carey D. Balaban, and Ken Sochats. "The All Needs Approach to Emergency Response." *Homeland Security Affairs* 8 (February 2012): article 1. <https://www.hsaj.org/articles/204>.
- Emergency Management Institute. "ICS-300—Intermediate ICS for Expanding Incidents." October 2013. https://www.in.gov/dhs/files/ICS_300_SM.pdf.
- Enarson, Elaine, Alice Fothergill, and Lori Peek. "Gender and Disaster: Foundations and Directions." In *Handbook of Disaster Research*, edited by Havidán Rodríguez, E. L. Quarantelli, and Russell Rowe Dynes. New York: Springer, 2007.

- Farber, Daniel A., Jim Chen, Robert Verchick, and Lisa Sun. “Who’s in Charge?” In *Disaster Law and Policy*, 2nd ed. Frederick, MD: Aspen Publishers, 2009.
- Farm Services Agency. *Disaster Assistance Fact Sheet: Agriculture Priorities and Allocations System (APAS)*. Washington, DC: U.S. Department of Agriculture, October 2015. https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdfiles/FactSheets/2015/apas_fact_sheet_oct2015.pdf.
- Federal Business Opportunities. “RFI for Pre-packaged Commercial Meals.” January 27, 2011. https://www.fbo.gov/index?s=opportunity&mode=form&id=eaea338540a0aea155a48a650a077352&tab=core&_cview=0.
- Federal Emergency Management Agency (FEMA). “Biography of William Craig Fugate.” Accessed October 21, 2016. <https://www.fema.gov/william-craig-fugate>.
- . “Commodity Air Drops to Central Island Communities.” October 10, 2017. <https://www.fema.gov/news-release/2017/10/10/commodity-air-drops-central-island-communities>.
- . “CONUS and OCONUS Assets.” In *Executive Guide to Domestic Incident Management and Support*. Washington, DC: Department of Homeland Security, 2017.
- . *Developing and Maintaining Emergency Operations Plans: Comprehensive Preparedness Guide (CPG) 101*, version 2.0. Washington, DC: Department of Homeland Security, 2010.
- . *Effective Coordination of Recovery Resources for State, Tribal, Territorial and Local Incidents*. Washington, DC: Department of Homeland Security, 2015. 16. <https://www.fema.gov/media-library/assets/documents/101940>.
- . “Emergency Support Function #7—Logistics Annex.” Annex, Department of Homeland Security, June 2016. https://www.fema.gov/media-library-data/1470149740861-a43de89d07026b4be5790cb20b84872c/ESF_7_Logistics_20160705_508.pdf.
- . *Food and Water in an Emergency*. Washington, DC: Department of Homeland Security, 2004. <https://www.fema.gov/pdf/library/f&web.pdf>.
- . “Hurricane Irene Press Conference.” August 26, 2011. <https://www.fema.gov/media-library-data/20130919-0849-5011-0063/transcripts20130919-5011-bacjf3.txt>.
- . “Hurricane Pam Exercise Concludes.” July 23, 2004. <https://www.fema.gov/news-release/2004/07/23/hurricane-pam-exercise-concludes>.

- . “Logistics Management Directorate.” April 1, 2015. <https://www.fema.gov/logistics-management-directorate>.
- . *National Response Framework, Third Edition*. Washington, DC: Department of Homeland Security, 2016.
- . *Preparedness in America: Research Insights to Increase Individual, Organizational, and Community Action*. Washington, DC: Department of Homeland Security, August 2014. www.fema.gov/media-library-data/1409000888026-1e8abc820153a6c8cde24ce42c16e857/20140825_Preparedness_in_America_August_2014_Update_508.pdf.
- . *Response Federal Interagency Operational Plan*, second edition. Washington, DC: Department of Homeland Security, August 2016. https://www.fema.gov/media-library-data/1471452095112-507e23ad4d85449ff131c2b025743101/Response_FIOP_2nd.pdf.
- . *Threat and Hazard Identification and Risk Assessment Guide: Comprehensive Preparedness Guide (CPG) 201*, 2nd ed. Washington, DC: Department of Homeland Security, 2013.
- Federal Emergency Management Agency Logistics Management Directorate. *FEMA Logistics Readiness Report*. Washington, DC: Department of Homeland Security, March 2018.
- Federal Emergency Management Agency Region X. *Cascadia Subduction Zone (CSZ) Catastrophic Earthquake and Tsunami Response Plan*. Washington, DC: Department of Homeland Security, 2017.
- . *Mass Care Metrics: Planning Branch Task Order 09, First Draft*. Washington, DC: Department of Homeland Security, 2013.
- Federal Motor Carrier Safety Administration. “Hours of Service of Drivers.” December 27, 2011. <https://cms.fmcsa.dot.gov/regulations/rulemaking/2011-32696>.
- “Flint Michigan Crisis ‘Not Just about Water,’ UN Rights Experts Say ahead of President Obama’s Visit.” UN News Centre, May 3, 2016. <http://www.un.org/apps/news/story.asp?NewsID=53839>.
- Flores, Alejandro Quiroz, and Alastair Smith. “Surviving Disasters.” Essay, New York University, 2010. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.461.9216&rep=rep1&type=pdf>.

- Florida Division of Emergency Management. “Annex 11: State Logistics Response Center (SLRC) Operation Protocols.” Annex, Florida Division of Emergency Management, September 8, 2016/ <https://www.floridadisaster.org/Response/Logistics/documents/State%20Logistics%20Plan%20-%20Annex%2011-%20SLRC%20Operations%20Protocols%20Revised%202016.pdf>.
- Fountain, Edmund D., and Trip Gabriel. “‘Cajun Navy’ Scours Houston Floodwaters for Stranded Residents.” *New York Times*, August 30, 2017. [/www.nytimes.com/2017/08/30/us/cajun-navy-brings-its-rescue-fleet-to-houstons-flood-zone.html](http://www.nytimes.com/2017/08/30/us/cajun-navy-brings-its-rescue-fleet-to-houstons-flood-zone.html).
- Freeman, Samuel. “Deliberative Democracy: A Sympathetic Comment.” *Philosophy & Public Affairs* 29, no. 4 (2000): 371–418. doi.org/10.1111/j.1088-4963.2000.00371.x.
- Fritz, Charles E., and John H. Mathewson. *Convergence Behavior in Disasters: A Problem in Social Control*. Washington, DC: National Academy of Sciences–National Research Council, 1957.
- Gaus, Gerald F. “Reason, Justification, and Consensus: Why Democracy Can’t Have it All.” In *Deliberative Democracy: Essays on Reason and Politics*, edited by James Bohman and William Rehg, 202–242. Cambridge, MA: MIT Press, 1997. www.sze.hu/~smuk/Nyilvanossag_torvenyek_CEE/Szakirodalom/Deliberat%C3%ADv%20demokr%C3%A1cia/deliberative%20democracy%20book.pdf#page=236.
- Goldman, Matt, Kalim Armstrong, and Thomas Dexter. “A Tale of Two Puerto Ricos.” YouTube video. Posted by Bloomberg, December 15, 2017. <https://www.youtube.com/watch?v=caLTF5kOra4>.
- Gordon, Paula D. “The Ethics Map: A Map of the Range of Concerns Encompassed by ‘Ethics and the Public Service.’” Gordon Homeland, accessed June 21, 2018. <http://gordonhomeland.com/>.
- Government Accountability Office (GAO). *Disaster Contracting: FEMA Needs to Cohesively Manage its Workforce and Fully Address Post-Katrina Reforms*. GAO-15-783. Washington, DC: GAO, 2015. <http://www.gao.gov/assets/680/672771.pdf>.
- Graham, David A. “The Mothers of All Disasters.” *The Atlantic*, September 2, 2015. <http://www.theatlantic.com/national/archive/2015/09/the-disaster-next-time/403063/>.
- Grandjean, Agnes. “Rolling Revision of the WHO Guidelines for Drinking-Water Quality: Water Requirements, Impinging Factors, and Recommended Intakes.” Draft for review, World Health Organization, August 2004. http://www.who.int/water_sanitation_health/dwq/nutwaterrequir.pdf.

- Grobman, Gary M. "Complexity Theory: A New Way to Look at Organizational Change." *Public Administration Quarterly* 29, no. 3 (Fall 2005): 350–382.
- Guha-Sapir, Debarati, Thomas Kirsch, Shayna Dooling, and Adam Sirois. *Independent Review of the U.S. Government Response to the Haiti Earthquake: Final Report*. Washington, DC: USAID, March 2011. http://pdf.usaid.gov/pdf_docs/pdacr222.pdf.
- Habermas, Jürgen. "The Public Sphere: An Encyclopedia Article (1964)." *New German Critique*, no. 3 (Autumn 1974): 49–55. <http://www.socpol.unimi.it/docenti/barisione/documenti/File/2008-09/Habermas%20%281964%29%20-%20The%20Public%20Sphere.pdf>.
- Hamer, John. "Economics of Scarcity." In *Editorial Research Reports 1973*, vol. II, 821–40. Washington, DC: CQ Press, 1973. <http://library.cqpress.com/cqresearcher/cqresre1973102600>.
- Healy, Jack, Frances Robles, and Ron Nixon. "Aid Is Getting to Puerto Rico. Distributing it Remains a Challenge." *New York Times*, October 3, 2017. www.nytimes.com/2017/10/03/us/puerto-rico-aid-fema-maria.html.
- Herman, Edward S., and Noam Chomsky. *Manufacturing Consent*. New York: Pantheon Books, 2002.
- Hernández, Arelis R., and Steven Mufson. "Getting Relief Supplies to Puerto Rico Ports is Only Half the Problem." *Washington Post*, September 28, 2017. www.washingtonpost.com/business/economy/getting-relief-supplies-to-puerto-rico-ports-is-only-half-the-problem/2017/09/28/9ff558a6-a460-11e7-8cfe-d5b912fab9c9_story.html?utm_term=.399bbbeddf4fb.
- Herodotus. *The Persian Wars*. Translated by Henry Cary. New York: Harper, 1876. <https://archive.org/details/herodotusnewlite00hero>.
- Herrera, Carla. "San Juan Mayor Slams Feds' Response to Puerto Rico: 'Get Your Ass Moving.'" *Huffington Post*, September 27, 2017. www.huffingtonpost.com/entry/san-juan-mayor-fema-hurricane-response_us_59cea7dbe4b09538b50842c2.
- Hickey, Harry E. *Water Supply Systems and Evaluation Methods: Volume I: Water Supply Systems Concepts*, October 2008, *Water Supply Systems and Evaluation Methods*. Washington, DC: FEMA, 2008. https://www.usfa.fema.gov/downloads/pdf/publications/water_supply_systems_volume_i.pdf.
- Hill, Austin Bradford. "Medical Ethics and Controlled Trials." *British Medical Journal* 1, no. 5337 (1963): 1043–1049.
- Hobbes, Thomas. *Leviathan*. Project Gutenberg, 2002. <https://www.gutenberg.org/files/3207/3207-h/3207-h.htm>.

- Holguín-Veras, José, Miguel Jaller, and Tricia Wachtendorf, “Comparative Performance of Alternative Humanitarian Logistic Structures after the Port-au-Prince Earthquake: ACEs, PIEs, and CANs.” *Transportation Research Part A: Policy and Practice* 46, no. 10 (2012): 1623–1640. doi.org/10.1016/j.tra.2012.08.002.
- Holguín-Veras, José, Miguel Jaller, Luk N. Van Wassenhove, Noel Pérez, and Tricia Wachtendorf. “On the Unique Features of Post-disaster Humanitarian Logistics.” *Journal of Operations Management* 30, no. 7–8 (2012): 494–506.
- Holguín-Veras, José, Noel Pérez, Miguel Jaller, Luk N. Van Wassenhove, and Felipe Aros-Vera. “On the Appropriate Objective Function for Post-disaster Humanitarian Logistics Models.” *Journal of Operations Management* 31, no. 5 (2013): 262–280. doi.org/10.1016/j.jom.2013.06.002.
- Hopley, Russel J. *Civil Defense for National Security: Report to the Secretary of Defense*. Washington, DC: DoD, 1948. <https://fas.org/irp/agency/dhs/fema/civildef-1948.pdf>.
- “How Citizens Turned into Saviors after Katrina Struck.” CBS, August 29, 2015. <https://www.cbsnews.com/news/remembering-the-cajun-navy-10-years-after-hurricane-katrina/>.
- Humble, John. “To Lick the Feet of our Well Born Masters.” In *The Debate on the Constitution, Part One: September 1787 to February 1788*, edited by Barnard Bailyn. New York: Literary Classics of the United States, 1993.
- Insurance Services Office. *Guide for Determination of Needed Fire Flow*. Edition 05-2008. Jersey City, NJ: ISO Properties, 2008. <http://www.ecs.umass.edu/cee/reckhow/courses/371/Documents/Needed%20Fire%20Flow%20Guide%202008.pdf>.
- International Federation of Red Cross and Red Crescent Societies. “Responding to Disasters.” Accessed January 23, 2017. <http://www.ifrc.org/en/what-we-do/disaster-management/responding/>.
- The Jefferson Foundation. “John Locke (Painting).” Accessed June 19, 2018. <https://www.monticello.org/site/house-and-gardens/john-locke-painting>.
- Jefferson, Thomas. To The Danbury Baptists, January 1, 1802. Monticello Digital Classroom, accessed June 21, 2018. <https://classroom.monticello.org/view/72414/>.
- . To Joseph C. Cabell, February 2, 1816. National Archives, accessed January 30, 2018. <https://founders.archives.gov/documents/Jefferson/03-09-02-0286>.

- . To Virginia Baptist Association of Chesterfield, November 21, 1908. Thomas Jefferson Foundation, accessed June 21, 2018. <http://tjrs.monticello.org/letter/2386>.
- . To William Stephens Smith, Paris, November 13, 1787. Thomas Jefferson Foundation, accessed June 27, 2018. <http://tjrs.monticello.org/letter/100>.
- Joint Chiefs of Staff. *DOD Dictionary of Military and Associated Terms*. Washington, DC: Joint Chiefs of Staff, 2018. <http://www.jcs.mil/Portals/36/Documents/Doctrine/pubs/dictionary.pdf>.
- Jonsen, Albert R. “Bentham in a Box: Technology Assessment and Health Care Allocation.” *Law, Medicine and Health Care* 14, no. 3–4 (1986): 172–174.
- Jordan, Karin. “The Disaster Survivor’s Hierarchy of Needs: What Every Disaster Mental Health Worker Should Know.” *Ideas and Research You Can Use: VISTAS 2015* (2015): article 95. <https://www.counseling.org/docs/default-source/vistas/the-disaster-survivor.pdf?sfvrsn=6>.
- Kafka, Franz. *The Trial*. Irvine, CA: Xist Publishing, 2015.
- Kahneman, Daniel. *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux, 2011.
- Kahneman, Daniel, and Amos Tversky. “Prospect Theory: An Analysis of Decision under Risk.” *Econometrica* 47, no. 2 (1979): 263–292. doi.org/10.2307/1914185.
- Kamm, F. M. *Intricate Ethics: Rights, Responsibilities, and Permissible Harm*. Oxford Ethics Series. New York: Oxford University Press, 2008.
- Kant, Immanuel. *The Metaphysical Elements of Ethics*. Project Gutenberg, 2004. <http://www.gutenberg.org/cache/epub/5684/pg5684-images.html>.
- Kant, Immanuel, Allen W. Wood, and J. B. Schneewind. *Groundwork for the Metaphysics of Morals*. New Haven, CT: Yale University Press, 2002.
- Kates, Robert William, Craig E. Colten, Shirley Laska, and Stephen P. Leatherman. “Reconstruction of New Orleans after Hurricane Katrina: A Research Perspective.” *Proceedings of the National Academy of Sciences* 103, no. 40 (2006): 14653–14660.
- “Katrina Untold: ‘We Needed Ice’—Billy McGee.” WDAM, August 19, 2015. <http://www.wdam.com/story/29832850/katrina-untold-we-needed-ice-billy-mcgee>.
- Kierkegaard, Søren. *Concluding Unscientific Postscript*. Princeton, NJ: Princeton University Press, 1941.

- . *Kierkegaard's The Concept of Dread*. Translated by Walter Lowrie. Princeton, NJ: Princeton University Press, 1957.
- Klein, Gary. "Naturalistic Decision Making." *Human Factors* 50, no. 3 (June 2008): 456–460. doi.org/10.1518/001872008X288385.
- Kleinberg, Eliot. "Hurricane Andrew's Hard Lessons." *Palm Beach Post*, June 1, 2012. <http://www.palmbeachpost.com/weather/hurricanes/hurricane-andrew-hard-lessons/UnxNE2cNiqv3kV7LGWLEmO/>.
- Köhler, Heinz. *Economics: The Science of Scarcity*. Oak Brook, IL: Dryden Press, 1970.
- Laertius, Diogenes. *The Lives of Eminent Philosophers*, edited by R.D. Hicks. Cambridge, MA: Harvard University Press, 1972. <http://www.perseus.tufts.edu/hopper/text?doc=urn:cts:greekLit:tlg0004.tlg001.perseus-eng1:2.5>.
- Lawrence, Chris, and Ed Lavandera. "Relief Workers Confront 'Urban Warfare.'" CNN, September 1, 2005. <http://www.cnn.com/2005/WEATHER/09/01/katrina.impact/>.
- LeDoux, Joseph E. *The Emotional Brain: The Mysterious Underpinnings of Emotional Life*. New York: Simon & Schuster, 1996.
- Levy, Lynn, Tim Howard, and Amanda Aronczyk (producers). "How to be a Hero." RadioLab, January 9, 2018. <http://www.radiolab.org/story/how-be-hero/>.
- Light, Donald W., and David Hughes. "Introduction: A Sociological Perspective on Rationing: Power, Rhetoric and Situated Practices." *Sociology of Health & Illness* 23, no. 5 (2001): 551–569.
- Lippman, Walter. *Public Opinion*. New York: Harcourt, Brace and Company, 1922.
- Locke, John. *Second Treatise of Civil Government*. Project Gutenberg, 2010. <https://www.gutenberg.org/files/7370/7370-h/7370-h.htm>.
- Lohr, David, and Kim Bellware. "Louisiana's 'Cajun Navy' Is a 100% Volunteer Group That's Helping Flood Victims." *Huffington Post*, August 29, 2017. https://www.huffingtonpost.com/entry/cajun-navy-louisiana_us_57bb1bf3e4b00d9c3a18c9d9.
- Long, Brock. "Once Canceled Contract Doesn't Define FEMA's Effort in Puerto Rico." *Washington Post*, February 15, 2018. https://www.washingtonpost.com/opinions/one-canceled-contract-doesnt-define-femas-effort-in-puerto-rico/2018/02/15/2c0891b2-11dc-11e8-a68c-e9374188170e_story.html?utm_term=.99b3c9c9fb9c.
- Longfellow Dana, Henry Wadsworth. "Sail on, O Ship of State!" *Colby Quarterly* 2, no. 13 (1950): art. 3. <https://digitalcommons.colby.edu/cgi/viewcontent.cgi?article=1228&context=cq>.

- Luban, David, Alan Strudler, and David Wasserman. "Moral Responsibility in the Age of Bureaucracy." *Michigan Law Review* 90, no. 8 (1992): 2349. doi.org/10.2307/1289575.
- Luft, Joseph. "The Johari Window: A Graphic Model of Awareness in Interpersonal Relations." *Human Relations Training News* 5, no. 1 (1961): 6–7.
- Machiavelli, Niccolò. *The Prince*. New York: Oxford University Press, 1998. <https://doi.org/10.1023/A:1009877217694>.
- Madison, James. To Edward Livingston, July 10, 1822. Founders Online, accessed June 21, 2018. <https://founders.archives.gov/documents/Madison/04-02-02-0471>.
- Mandelbrot, Benoit, and Richard L. Hudson. *The (Mis)behavior of Markets: A Fractal View of Risk, Ruin, and Reward*. New York: Basic Books, 2004.
- Mann, Charles C. "The Rise of Big Water." *Vanity Fair*, September 1, 2009. <https://www.vanityfair.com/news/2007/05/bigwater200705>.
- Mankiw, N. Gregory. *Principles of Microeconomics*, vol. 10. Boston: Cengage Learning, 2006.
- Markets Insider. "FEMA Seeks Contractors to Provide Meals in Wake of Hurricane Maria Will Begin Awarding Contracts ASAP." September 19, 2017. <http://markets.businessinsider.com/news/stocks/FEMA-Seeks-Contractors-to-Provide-Meals-in-Wake-of-Hurricane-MariaWill-Begin-Awarding-Contracts-ASAP-1002384581>
- Marx, Karl. *Capital: A Critique of Political Economy, Volume 1: The Process of Capitalist Production*. Translated from the 3rd German edition by Samuel Moore and Edward Aveling, edited by Friedrich Engels, revised and amplified according to the 4th German edition by Ernest Untermann. Chicago: Charles H. Kerr and Co., 1909.
- Mazzei, Patricia, and Agustin Armendariz. "FEMA Contract Called for 30 Million Meals for Puerto Ricans. 50,000 Were Delivered." *New York Times*, February 6, 2018. <https://www.nytimes.com/2018/02/06/us/fema-contract-puerto-rico.html>.
- McCoy, Nilagia. "TIME's Nancy Gibbs: The Disintermediation of Media and Politics." Harvard Kennedy School Shorenstein Center on Media, Politics and Public Policy, March 1, 2016. <https://shorensteincenter.org/speaker-series-nancy-gibbs/>.
- Meehl, Paul E. *Clinical versus Statistical Prediction: A Theoretical Analysis and a Review of the Evidence*. Minneapolis: University of Minnesota Press, 1954. <http://dx.doi.org/10.1037/11281-010>.

- Merton, Robert K. "Bureaucratic Structure and Personality." *Social Theory and Social Structure*. Glencoe, IL: Free Press, 1957. http://www.sociosite.net/topics/texts/merton_bureaucratic_structure.php.
- Meyer, Robinson. "A Major Earthquake in the Pacific Northwest Looks Even Likelier." *The Atlantic*, August 11, 2016. <https://www.theatlantic.com/science/archive/2016/08/a-major-earthquake-in-the-pacific-northwest-just-got-more-likely/495407/>.
- Mill, John Stuart, and John Gray. *On Liberty and Other Essays*. Oxford: Oxford University Press, 1998.
- Millen, Barbara E. *2015–2020 Dietary Guidelines for Americans*, eighth edition. Washington, DC: U.S. Department of Health and Human Services and U.S. Department of Agriculture, December 2015.
- Moon, Evyn. "FEMA's Craig Fugate, on His Replacement and Hatred for Bureaucracy." WUFT, March 23, 2017. <https://www.wuft.org/news/2017/03/23/femas-craig-fugate-on-his-replacement-and-hatred-for-bureaucracy/>.
- Moss, David A. "Courting Disaster? The Transformation of Federal Disaster Policy since 1803." In *The Financing of Catastrophe Risk*, edited by Kenneth A. Froot. Chicago: University of Chicago Press, 1999.
- . *When All Else Fails: Government as the Ultimate Risk Manager*, 1st ed. Cambridge, MA: Harvard University Press, 2004.
- Moviemagg. "Hurricane Andrew, We Need Help! Part 1." YouTube video, posted September 1, 2009. <https://www.youtube.com/watch?v=qV3HWSDxtC4>.
- Murray, Christopher J. "Quantifying the Burden of Disease: The Technical Basis for Disability-Adjusted Life Years." *Bulletin of the World Health Organization* 72, no. 3 (1994): 429–445.
- National Commission on Terrorist Attacks upon the United States. *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks upon the United States*, official government edition. Washington, DC: U.S. Government Printing Office, 2004.
- Nelson, Gary. "Hurricane Andrew Remembered: 20 Years Later." CBS Miami, August 24, 2012. <http://miami.cbslocal.com/2012/08/24/hurricane-andrew-remembered-20-years-later/>.
- "New Bishops' Central Storehouse Ready to Serve the Needy." Mormon Newsroom, January 27, 2012. <http://www.mormonnewsroom.org/article/new-bishops-central-storehouse-serve>.
- Nietzsche, Friedrich. *The Birth of Tragedy*. Mineola, NY: Dover Publications, 1995.

- . *On the Genealogy of Morality*. New York: Cambridge University Press, 2007.
- Nixon, Jay. “Leadership in Time of Crisis.” C-SPAN, video, February 22, 2016. <https://www.c-span.org/video/?405047-1/discussion-homeland-security-secretary-jeh-johnson-crisis-leadership>.
- Norcross, Bryan. “Hurricane Andrew: As it Happened, pt. 2 (WTVJ Special).” YouTube video. Posted by StormSpotterMike, August 21, 2012. <https://www.youtube.com/watch?v=ePwUVszDy-o>.
- Nozick, Robert. *Anarchy, State, and Utopia*. Cambridge, MA: Harvard University Press, 1974.
- Nussbaum, Martha C. “Virtue Ethics: A Misleading Category?” *The Journal of Ethics* 3, no. 3 (1999), 163–201.
- Obama, Barack. “Remarks by the President at the American Red Cross.” Obama White House, October 30, 2012. <https://obamawhitehouse.archives.gov/the-press-office/2012/10/30/remarks-president-american-red-cross>.
- . “Remarks by the President on Hurricane Sandy.” Obama White House, October 28, 2012. <https://obamawhitehouse.archives.gov/the-press-office/2012/10/28/remarks-president-hurricane-sandy>.
- Obama White House. “Press Briefing by Press Secretary Jay Carney and FEMA Administrator Craig Fugate.” August 29, 2011. <https://www.whitehouse.gov/the-press-office/2011/08/29/press-briefing-press-secretary-jay-carney-and-fema-administrator-craig-f>.
- Oregon Department of Geology and Mineral Industries. “Tsunami Evacuation Map: Seaside & Gearhart, Oregon.” June 3, 2013. www.oregongeology.org/pubs/tsubrochures/SeasideGearhartEvacBrochure-6-3-13_onscreen.pdf.
- Oregon Office of Emergency Management. “Cascadia: Oregon’s Greatest Natural Threat.” In *The Oregon Resilience Plan: Reducing the Risk and Improving Recovery for the Next Cascadia Earthquake and Tsunami*. Salem, OR: Oregon Seismic Safety Policy Advisory Committee, February 2013. www.oregon.gov/oem/Documents/01_ORP_Cascadia.pdf.
- . “Cascadia Rising: Cascadia Subduction Zone (CSZ) Catastrophic Earthquake and Tsunami.” Exercise scenario document, January 2015, State of Oregon. www.oregon.gov/oem/Documents/Cascadia_Rising_Exercise_Scenario.pdf.
- . “ESF 6—Mass Care.” February 3, 2015, www.oregon.gov/oem/Documents/2015_OR_EOP_ESF_06_mass_care.pdf.

- . “Emergency Declaration Guidelines for Local Elected and Appointed Officials.” *Emergency guidelines*, Oregon Military Department, 2015. www.oregon.gov/OEM/Documents/decl_guide.pdf.
- Oxfam. “Oxfam Water Supply Scheme for Emergencies.” Accessed December 1, 2017. <http://www.bvsde.paho.org/texcom/desastres/oxfamwfm.pdf>.
- Packer, Randall K. “How Long Can the Average Person Survive Without Water?” *Scientific American*, December 9, 2002. <https://www.scientificamerican.com/article/how-long-can-the-average/>.
- Paine, Thomas. “The Rights of Man.” In *Common Sense and Other Writings*, edited by Gordon S. Wood. New York: Modern Library, 2003.
- Pear, Robert. “Hurricane Andrew; Breakdown Seen in Storm Aid.” *New York Times*, August 29, 1992. <http://www.nytimes.com/1992/08/29/us/hurricane-andrew-breakdown-seen-in-us-storm-aid.html>.
- Perino, Charles S. “Should We Stay or Should We Go Now? The Physical, Economic, Geopolitical, Social and Psychological Factors of Recovery from Catastrophic Disaster.” Master’s thesis, Naval Postgraduate School, 2014. <https://www.hsdl.org/?view&did=760183>.
- Perrow, Charles. *The Next Catastrophe: Reducing Our Vulnerabilities to Natural, Industrial, and Terrorist Disasters*. Princeton, NJ: Princeton University Press, 2011.
- Peter, Fabienne. “Rawls’ Idea of Public Reason and Democratic Legitimacy.” *Journal of International Political Theory* 3, no. 1 (2007): 129–143. journals.sagepub.com/doi/pdf/10.1177/1743453X0700300110.
- Pew Charitable Trusts. “American Families Face a Growing Rent Burden.” April 19, 2018. <http://www.pewtrusts.org/en/research-and-analysis/reports/2018/04/american-families-face-a-growing-rent-burden>.
- Pew Research Center “America’s Changing Religious Landscape.” May 12, 2015. <http://www.pewforum.org/2015/05/12/americas-changing-religious-landscape/>.
- Pierce, Terry C. “Voodoo Logistics Sink Triphibious Warfare.” *Proceedings Magazine* 122, no. 9/1 (September 1996): 123. <https://www.usni.org/magazines/proceedings/1996-09/voodoo-logistics-sink-triphibious-warfare>.
- Pierre, Robert E., and Ann Gerhart. “News of Pandemonium May Have Slowed Aid.” *Washington Post*, October 5, 2005. http://www.washingtonpost.com/wp-dyn/content/article/2005/10/04/AR2005100401525_2.html.

- Plato. "Apology." MIT, accessed June 19, 2018. <http://classics.mit.edu/Plato/apology.html>.
- . "The Republic, Book VIII." In *Plato in Twelve Volumes*, translated by Paul Shorey. Cambridge, MA: Harvard University Press, 1969. <http://data.perseus.org/citations/urn:cts:greekLit:tlg0059.tlg030.perseus-eng1:8>.
- Prager, Jonas, and Swati Desai. "Privatizing Local Government Operations: Lessons from Federal Contracting out Methodology." *Public Productivity & Management Review* (1996): 185–203.
- "Puerto Rico Needed Meals. FEMA Let the Island Down." *Washington Post*, February 9, 2018. https://www.washingtonpost.com/opinions/puerto-rico-needed-meals-fema-let-the-island-down/2018/02/09/321e9878-0c49-11e8-95a5-c396801049ef_story.html?utm_term=.ecb22dcf06f9.
- Quarantelli, Enrico L. "Catastrophes Are Different from Disasters: Some Implications for Crisis Planning and Managing Drawn from Katrina." *Understanding Katrina: Perspectives from the Social Sciences* (Social Science Research Council), June 11, 2006. <http://understandingkatrina.ssrc.org/Quarantelli/>.
- Rawls, John. *A Theory of Justice*. Cambridge, MA: The Belknap Press of Harvard University Press, 1999.
- Reed, Brian, and Bob Reed. "Technical Note 9: How Much Water Is Needed in Emergencies." In *Technical Notes on Drinking-Water, Sanitation and Hygiene in Emergencies*. Geneva: World Health Organization, 2011. http://www.who.int/water_sanitation_health/publications/2011/tn9_how_much_water_en.pdf.
- Richardson, Dennis, and Kip Memmott. "The State Must Do More to Prepare Oregon for a Catastrophic Disaster." Report 2018-03, January 2018, State of Oregon. <http://sos.oregon.gov/audits/Documents/2018-03.pdf>.
- Ripley, Amanda. *The Unthinkable: Who Survives When Disaster Strikes—And Why*, Kindle ed. New York: Crown Publishing Group, 2009.
- Robbins, Lionel Charles. *An Essay on the Nature and Significance of Economic Science*. London: MacMillan, 1935.
- Rose, Joseph. "Portland Cargo Bike Disaster Drill: When Cascadia Earthquake Hits, City's Bicyclists Will Deliver Relief." *OregonLive*, July 19, 2014. www.oregonlive.com/commuting/index.ssf/2014/07/portland_cargo_bike_disaster_d.html.
- Rousseau, Jean-Jacques. *The Social Contract & Discourses*. Translated by George Douglas Howard Cole. Project Gutenberg, 2014. <http://www.gutenberg.org/files/46333/46333-h/46333-h.htm>.

- Saal, Petru. "Stealing Gauteng Municipal Water—Even to Send to Parched Cape Town—Is Still Stealing." *BusinessDay*, February 1, 2018. <https://www.businesslive.co.za/bd/national/2018-02-01-stealing-gauteng-municipal-water--even-to-send-to-parched-cape-town--is-still-stealing/>.
- Safian, Yasmin Hanani Mohd. "Necessity (*darura*) in Islamic Law: A study with special reference to the Harm Reduction Programme in Malaysia." (PhD thesis, University of Exeter, 2010. <https://ore.exeter.ac.uk/repository/bitstream/handle/10036/112862/YasminhananiMS.pdf?sequence=1&isAllowed=y>).
- Schleifstein, Mark. "FEMA Knew of Storm's Potential, Mayfield Says." *New Orleans Times-Picayune*, September 4, 2005. http://www.nola.com/katrina/index.ssf/2005/09/fema_knew_storms_potential_mayfield_says.html
- Schmitter, Philippe C., and Terry Lynn Karl. "What Democracy Is... and Is Not." *Journal of Democracy* 2, no. 3 (Summer 1991): 75–88. <https://doi.org/10.1353/jod.1991.0033>.
- Schulz, Kathryn. "The Really Big One." *The New Yorker*, July 20, 2015. <https://www.newyorker.com/magazine/2015/07/20/the-really-big-one>.
- Schumpeter, Joseph A. *Capitalism, Socialism and Democracy*. New York: Harper Brothers, 1942.
- Sellers, Peter (as Dr. Strangelove). In Stanley Kubrick, Peter George, and Terry Southern, *Dr. Strangelove; Or, How I Learned to Stop Worrying and Love the Bomb*. Culver City, CA: Sony Pictures Home Entertainment, 1964.
- Shalby, Colleen. "What's the Difference between 'Looting' and 'Finding'? 12 Years after Katrina, Harvey Sparks a New Debate." *Los Angeles Times*, August 29, 2017. <http://www.latimes.com/nation/la-na-harvey-20170829-story.html>.
- Siegel, Robert. "25 Years Later: How Hurricane Andrew Impacted Emergency Response." NPR, August 24, 2017. <https://www.npr.org/2017/08/24/545901808/25-years-later-hurricane-andrews-devastation-lingers>.
- Smith, Adam. *Wealth of Nations*. Oxford: Oxford University Press, 1976.
- Smith, Ellie. "San Juan Mayor's Complaints Dismissed as 'Political Noise' by FEMA Chief." ABC News, October 8, 2017. <http://abcnews.go.com/Politics/san-juan-mayors-complaints-dismissed-political-noise-fema/story?id=50353414>.
- Smith, James Patterson. *Hurricane Katrina: The Mississippi Story*. Jackson: University Press of Mississippi, 2012.

- Solis, William. *Defense Logistics: DoD Has Begun to Improve Supply Distribution Operations, but Further Actions Are Needed to Sustain These Efforts*. GAO-05-775. Washington, DC: GAO, 2005. <http://www.gao.gov/new.items/d05775.pdf>.
- The Sphere Project. "Humanitarian Charter and Minimum Standards in Food Security and Nutrition." Accessed December 1, 2017. <http://www.spherehandbook.org/en/introduction-3/>.
- . "Water Supply Standard 1: Access and Water Quantity." Accessed June 23, 2018. <http://www.spherehandbook.org/en/water-supply-standard-1-access-and-water-quantity/>.
- Sterba, James P. "Toulmin to Rawls." In *Ethics in the History of Western Philosophy*, edited by Robert J. Cavalier, James Gouinlock, and James P. Sterba. London: MacMillan, 1989.
- Sweeney, Patrick C. "A Primer for: *Guidance for Employment of the Force (GEF), Joint Strategic Capabilities Plan (JSCP), the Adaptive Planning and Execution (APEX) System, and Global Force Management (GFM)*." NWC 2061B. Report, Naval War College, 2011. <https://jsou.blackboard.com/bbcswebdav/library/Library%20Content/JSOU%20References/SOPC/A%20Primer%20for%2CGuidance%20for%20Employment%20of%20the%20Force%20%28GEF%29%2C%20Joint%28A9R725%29.pdf>.
- Thaler, Richard. "Toward a Positive Theory of Consumer Choice." *Journal of Economic Behavior & Organization* 1, no. 1 (1980): 39–60.
- Thevenot, Brian, and Gordon Russell. "Rape. Murder. Gunfights." *Times-Picayune*, September 26, 2005. http://www.nola.com/katrina/index.ssf/2005/09/rape_murder_gunfights.html.
- Tocqueville, Alexis de. *Democracy in America*, vol. 1. Project Gutenberg, 2006. <https://www.gutenberg.org/files/815/815-h/815-h.htm#link2HCH0015>.
- Torresan, Laura Zink. "Cascadia Earthquakes and Tsunami Hazards Studies." U.S. Geological Survey, July 15, 1998. <https://walrus.wr.usgs.gov/earthquakes/cascadia/>.
- Tyler, Tom R., and Heather J. Smith. "Justice, Social Identity, and Group Processes." In *The Psychology of the Social Self*, edited by Tom R. Tyler, Roderick M. Kramer, and Oliver P. John. New York: Psychology Press, Taylor & Francis Group, 2012.
- United States Department of Agriculture Economic Research Service. "Measurement." Accessed June 23, 2018. <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/measurement#insecurity>.

- United States Postal Service (USPS) Office of the Inspector General. “Guiding Principles for a New Universal Service Obligation.” RARC-WP-15-001. Report, USPS Office of the Inspector General, November 2014. https://www.uspsoig.gov/sites/default/files/document-library-files/2015/rarc-wp-15-001_0.pdf.
- Urahn, Susan K. “The Local Squeeze: Falling Revenues and Growing Demand for Services Challenge Cities, Counties, and School Districts.” Report, Pew Charitable Trusts, 2012. <http://www.pewtrusts.org/en/research-and-analysis/reports/0001/01/01/the-local-squeeze>.
- U.S. Air Force. “Fact Sheet: C-5M Super Galaxy.” U.S. Air Force, May 15, 2006. <http://www.af.mil/About-Us/Fact-Sheets/Display/Article/104492/c-5-abc-galaxy-c-5m-super-galaxy/>.
- . “Fact Sheet: C-17 Globemaster III.” October 1, 2015. <http://www.af.mil/About-Us/Fact-Sheets/Display/Article/104523/c-17-globemaster-iii/>.
- U.S. Army. *Army Food Program*. AR 30-22. Washington, DC: Department of the Army, 2012.
- . “CH-47 Chinook Helicopter.” November 4, 2014. https://www.army.mil/article/137584/ch_47_chinook_helicopter.
- . *Water Planning Guide*. Fort Lee, VA: U.S. Army Combined Arms Support Command, November 2008. “[http://www.quartermaster.army.mil/pwd/publications/water/Water_Planning_Guide_rev_103008_dtd_Nov_08_\(5-09\).pdf](http://www.quartermaster.army.mil/pwd/publications/water/Water_Planning_Guide_rev_103008_dtd_Nov_08_(5-09).pdf).”
- U.S. Fire Administration. “Incident Command 9-11: Lessons Learned at the Pentagon; Shanksville, PA and Boca Raton, FL.” Accessed June 23, 2018. https://www.usfa.fema.gov/downloads/library/transcript_sep11part2.pdf.
- U.S. House Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina. *A Failure of Initiative: Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina*. H. Rept. 109-377. Washington, DC: U.S. Government Printing Office, 2006.
- U.S. Navy. “United States Navy Fact File: MH-53E Sea Dragon Helicopter.” March 6, 2017. http://www.navy.mil/navydata/fact_display.asp?cid=1200&tid=400&ct=1.
- Vanhemert, Kyle. “FEMA Enlists Designers to Rethink Disaster Relief.” *Wired*, February 6, 2014. <https://www.wired.com/2014/02/fema-frog-teamed-redesign-disaster-relief/>.
- Volk, Michael L., Anna SF Lok, Peter A. Ubel, and Sandeep Vijan. “Beyond Utilitarianism: A Method for Analyzing Competing Ethical Principles in a Decision Analysis of Liver Transplantation.” *Medical Decision Making* 28, no. 5 (2008): 763–772.

- Wachtendorf, Tricia. "Session 7a: Catastrophe Readiness and Response Course." FEMA, 2010. Accessed June 20, 2018. <https://training.fema.gov/hiedu/docs/crr/cat%20-%20session%207a%20-%20part%201%20-%20logistics%20power%20point.ppt>.
- Wachtendorf, Tricia, Bethany Brown, José Holguín-Veras, and Satish Ukkusuri. "Catastrophe Characteristics and their Impact on Critical Supply Chains: Problematizing Material Convergence and Management Following Hurricane Katrina." Preliminary Paper #365. Preliminary paper, University of Delaware Disaster Research Center, 2010. <http://udspace.udel.edu/handle/19716/4991>.
- Washington, George. Farewell Address, 1796. Yale Law School, accessed June 20, 2018. http://avalon.law.yale.edu/18th_century/washing.asp.
- . To Henry Laurens (December 23, 1777). Founders Online, accessed June 23, 2018. <https://founders.archives.gov/documents/Washington/03-12-02-0628>.
- Washington Military Department. "ESF 6: Mass Care, Emergency Assistance, Temporary Housing, and Human Services." August 2016. <https://mil.wa.gov/uploads/pdf/PLANS/wa-esf6-mass-care-final-aug2016.pdf>.
- Webb, Gary R., Michael Beverly, Megan McMichael, James Noon, and Tabitha Patterson. "Role Improvising under Conditions of Uncertainty: A Classification of Types." Preliminary Paper #289. Preliminary paper, University of Delaware Disaster Research Center, 1999. <http://udspace.udel.edu/handle/19716/666>.
- Weber, Max. *The Theory of Social and Economic Organization*. New York: Simon and Schuster, 2009.
- The White House. *National Defense Resources Preparedness*. Executive Order 13603. Washington, DC: The White House, 2012. <https://obamawhitehouse.archives.gov/the-press-office/2012/03/16/executive-order-national-defense-resources-preparedness>.
- "Wilderness Survival Rules of 3—Air, Shelter, Water and Food." *Backcountry Chronicles*, May 29, 2012. <http://www.backcountrychronicles.com/wilderness-survival-rules-of-3/>.
- Wood, Nathan J. "Community Clusters of Tsunami Vulnerability in the U.S. Pacific Northwest." *Proceedings of the National Academies of Sciences (PNAS)* 112, no. 17 (April 28, 2015): 5354–5359. <http://www.pnas.org/content/112/17/5354.full.pdf>.
- Wuthnow, Robert. *America and the Challenges of Religious Diversity*. Princeton, NJ: Princeton University Press, 2005.
- Zack, Naomi. *Ethics for Disaster*. Lanham, MD: Rowman & Littlefield, 2009.

Zakaria, Fareed. *The Future of Freedom: Illiberal Democracy at Home and Abroad*. New York: W.W. Norton & Company, 2003.

Zimmerman, Joseph F. "Law-Making by Assembled Citizens." In *The New England Town Meeting: Democracy in Action*. Westport, CT: Praeger, 1999.

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California