DISASTER JUSTICE: THE GEOGRAPHY OF HUMAN CAPABILITY

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INTRODUCTION

A funny thing happened on the way to the sumo tournament. As expected, I was wowed by the wrestlers' varicolored robes and plus-size bodies, but I left more impressed with the bustling spectators and their super-sized hearts. In the broad lobbies of Tokyo's wrestling arena, souvenir stands lined the walls, stocked with keychains, sweat towels, and bobbleheads featuring all of your sumo heroes. But what hooked me—along with dozens of Japanese fans headed for the bleachers—was a wooden kiosk at the back where a lady was selling jams and chutneys made by farmers in Tohoku, a hilly region to the north, which less than a year ago had been pulverized by a monstrous earthquake and tsunami. The line for jam and chutney snaked along for several meters. Even in a crowded lobby, with the year's first tournament moving into full swing, these folks, through the smallest of gestures, wanted to help.[1]

Natural disasters affect us this way. They often pull a nation together and inspire acts of generosity and good citizenship. But for those who study (or have lived through) natural disasters, there is also a less encouraging side. Despite the best efforts of individuals and their communities, the heaviest burdens of disaster are borne by those with the least power—those who, for whatever social and economic reasons, are more exposed, more susceptible, and less resilient when disaster strikes. Social structures designed to protect

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1. Many sumo wrestlers have themselves been active in relief and recovery work related to the 2011 disaster. *See, e.g.*, Antoni Slodkowski, *Sumo Wrestlers Lift Disaster-Hit City's Spirit*, REUTERS (Aug. 18, 2011), http://www.reuters.com/article/2011/08/18/us-japan-disaster-sumo-idUSTRE77H0ZZ20110818 (reporting on the sumo wrestlers' return to the disaster-devastated region to train and give back to the community); Brooks Baehr, *Konishiki, Sumotori Savior in Tsunami Zone*, HAWAII NEWS NOW (May 17, 2011), http://www.hawaiinewsnow.com/story/14664777/konishiki-musashimaru-feed-thousands-of-tsunami-victims (reporting on a sumo wrestler's humanitarian mission to aid tsunami victims still living in emergency shelters).

people from discrimination often fracture under the mounting stress. Catastrophe is bad for everyone. But it is especially bad for the weak and the disenfranchised. That was the case in California's Loma Prieta earthquake in 1989. It was the case in Hurricane Katrina in 2005. And, sadly, it was the case in the 2011 Japan earthquake, where many with lower incomes and skills were pushed into poverty and where victims over sixty years old accounted for more than sixty-five percent of all deaths.[2]

In the United States, "social vulnerability"—the part of a community's susceptibility to harm that can be attributed to demographic characteristics—has become a major concern among disaster researchers. For reasons I will develop in this Article, social vulnerability should become a more prominent concern in our nation's disaster policy. I have written on this topic before, and I call it "Disaster Justice."[3] I have noted its relationship to the environmental-justice movement and suggested how advocates could build on lessons learned in that movement.[4] Other legal scholars have begun examining disaster justice from various angles.[5] The topic

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2. Noriko Murai, *But Is It Not in Fact Leaking a Little?, in* TSUNAMI: JAPAN'S POST-FUKUSHIMA FUTURE at Kindle Locations 1852–56 (Jeff Kingston ed., 2011) (ebook published by Foreign Policy), *available at* http://www.foreignpolicy.com/ebooks/tsunami_japans_post_fukushima_future.

3. *See generally* ROBERT R.M. VERCHICK, FACING CATASTROPHE: ENVIRONMENTAL ACTION FOR A POST-KATRINA WORLD (2010).

4. *Id.* at 116–27; *see also* Robert R.M. Verchick, *Katrina, Feminism, and Environmental Justice*, 13 CARDOZO J.L. & GENDER 791 (2007) (examining gender disparity in disaster policy).

5. *See, e.g.*, Jim Chen, *Law Among the Ruins*, *in* LAW AND RECOVERY FROM DISASTER: HURRICANE KATRINA 1 (Robin Paul Malloy ed., 2008); Daniel A. Farber, *Disaster Law and Inequality*, 25 LAW & INEQ. 297 (2007); DANIEL A. FARBER, JIM CHEN, ROBERT R.M. VERCHICK & LISA GROW SUN, DISASTER LAW AND POLICY 203–47 (2d ed. 2012) (examining evidence of social vulnerability in a larger context of disaster law and policy); Davida Finger, Laila Hlass, Anne S. Hornsby, Susan S. Kuo & Rachel A. Van Cleave, *Engaging the Legal Academy in Disaster Response*, 10 SEATTLE J. FOR SOC. JUST. 211 (2012); Charles W. Gould, *The Right to Housing Recovery After Natural Disasters*, 22 HARV. HUM. RTS. J. 169 (2009) (looking at post-disaster reconstruction from a housing perspective); Sharona Hoffman, *Preparing for Disaster: Protecting the Most Vulnerable in Emergencies*, 42 U.C. DAVIS L. REV. 1491 (2009) (exploring how vulnerable populations are affected by disasters); Jonathan P. Hooks & Trisha B. Miller, *The Continuing Storm: How Disaster Recovery Excludes Those Most in Need*, 43 CAL. W. L. REV. 21 (2006) (looking at how disasters affect underserved communities); Susan S. Kuo, *Speaking in Tongues: Mandating Multilingual Disaster Warnings in the Public Interest*, 14 WASH. & LEE J. CIVIL RTS. & SOC. JUST. 3 (2007) (assessing emergency alert systems in bilingual communities); RICHARD THOMPSON FORD, PLAYING THE RACE CARD: HOW BLUFFING ABOUT BIAS MAKES RACE RELATIONS HARDER (2008) (discussing the response to Hurricane Katrina); Diane P. Wood, *The Bedrock of Individual Rights in Times of Natural Disaster*, 51 HOW. L. J. 747 (2008) (addressing the role of the courts and rule of law in post-disaster communities).

appears to be gaining critical mass. If so, we legal scholars can learn a lot from our colleagues in the social sciences who have been investigating this terrain for more than three decades.

This Article is about setting the foundation for more detailed discussions of disaster justice in the legal setting. To do that, we in the legal community need to know more about the social science data underlying a community's disaster risk. We must better understand the political and moral implications of a society that allows a "disaster underclass" to grow unnoticed in a nation committed to freedom and democracy. And we must have some idea of the steps we must take to address the problem.

Part I of this Article investigates the social meaning and geographic patterns of disaster. It describes how a testy letter from Jean-Jacques Rousseau developed insights about the social causes of disaster that are today reflected in disaster research centers and policy circles throughout the United States. We will see how social scientists—in particular geographer Susan Cutter and her colleagues—have come to think of disaster as a "social" phenomenon, where demographic characteristics like class and race can influence a community's hazard-risk index as much as its location. Until now, most of the legal scholarship in this area (mine included) has relied more on selective accounts of disasters than on national or regional statistical data. Vivid examples are important—and I offer more in this Article—but policymakers also need maps and numbers to make their case. The point is to show that disaster policy encompasses many aspects of law and policy and must be mainstreamed into many sectors of government.

Part II investigates the social and political meaning of injustice. Assuming disasters are all in some way a product of society, I ask if the arrangement we have can be considered not just unfortunate, but also unjust. The writings of political theorist Judith Shklar and economist Amartya Sen help lead this inquiry. Each of them devoted years to analyzing the nature of inequality. Perhaps less known, each also used examples of natural disaster to hammer down their most important points. In particular, Sen's capability approach offers an important framework for seeing social resilience in times of disaster as a significant aspect of personal freedom.

Part III unites the concepts of disaster and justice. It sets forth some general principles for developing new policies and using old ones to strengthen social resilience in the future. In this Part, I offer two concrete policy initiatives that can set us on a course for progress:

a federal executive order on disaster justice and a nationally consistent disaster-justice mapping tool.

Before we set off, let us be clear on definitions. This Article focuses on "natural disasters." The International Federation of Red Cross and Red Crescent Societies defines "disaster" as "[a] sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources."[6] A "natural" disaster, as I use the term, is a calamitous event that is triggered at least in part by a natural force—an earthquake, a flood, a hurricane, a drought. We will see soon enough that many experts dismiss the possibility of any disaster being completely "natural," but for now we can live with this definition.

In addition, I will often refer to "disaster research" or "disaster policy." Working with three colleagues, I have spent the years since Katrina helping to develop the field of "disaster law."[7] Daniel Farber has argued that what most characterizes disaster law (and as I use the terms, disaster research and disaster policy) is what he calls "the Cycle of Disaster Law"—that is, a set of progressive strategies that move from mitigation planning, to emergency response, to victim compensation, and finally to recovery and rebuilding, which ideally feeds back into mitigation planning.[8] Figure 1 illustrates what I will call the Circle of Risk Management, which will occasionally be referred to throughout this Article.

6. *What Is a Disaster?*, INT'L FED'N OF RED CROSS & RED CRESCENT SOC'YS, http://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/what-is-a-disaster (last visited Oct. 10, 2012).

7. *See generally* FARBER ET AL., *supra* note 5.

8. Daniel A. Farber, *Symposium Introduction: Navigating the Intersection of Environmental Law and Disaster Law*, 2011 BYU L. REV. 101, 109–10 (2011).

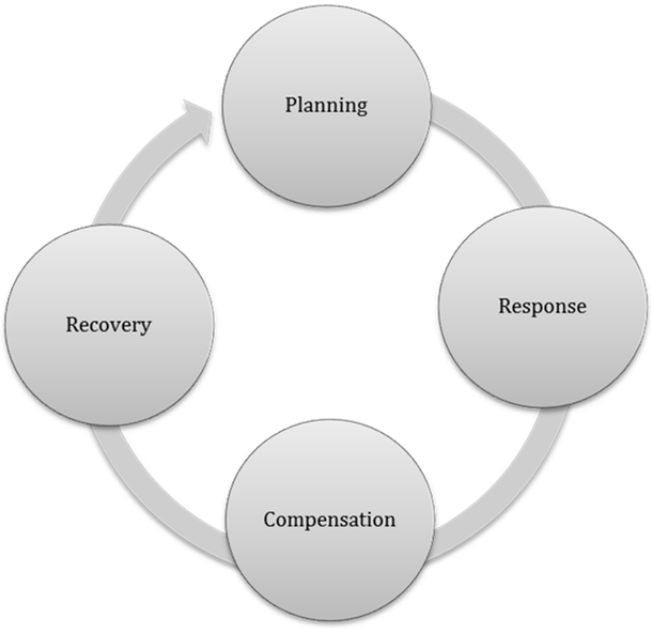

Fig. 1. Circle of Risk Management

I. DISASTER

A. *Misfortune or Injustice?*

You can take all of the bad things that happen in this world and throw them into two buckets—one labeled "Misfortune" and the other "Injustice." This is the premise suggested by the political theorist Judith Shklar in her famous Storrs Lectures delivered at Yale in 1988.[9] Though the dichotomy is meant to apply to all human miseries, Shklar starts with the example of an earthquake:[10]

> If the dreadful event is caused by the external forces of nature, it is a misfortune and we must resign ourselves to our suffering. Should, however, some ill-intentioned agent, human or supernatural, have brought it about, then it is an injustice and we may express indignation and outrage.[11]

By Shklar's own admission, the distinction in isolation does not explain much. That is because "what is treated as unavoidable and

9. *See generally* JUDITH N. SHKLAR, THE FACES OF INJUSTICE (1990) (developing the thesis presented in the Storrs Lectures, hosted at Yale Law School in 1988).

10. *Id.* at 1–2.

11. *Id.* at 1.

natural, and what is regarded as controllable and social, is often a matter of technology and of ideology or interpretation."[12] It is also a matter of how broadly one reads the phrase "ill-intentioned." While that phrase might suggest some form of conscious resolve, Shklar is clear that injustice can follow not only from bad intent and recklessness, but also from more ambiguous behavior, such as a government's failure to address an inequality or a foreseeable danger. "The very distinction between injustice and misfortune can sometimes be mischievous," Shklar writes; "[t]hat something is the work of nature or of an invisible social hand does not absolve us from the responsibility to repair the damage and to prevent its recurrence as much as possible."[13]

But while people might disagree about how to describe a particular act or failure to act, Shklar believes the inquiry itself reveals a noteworthy pattern, namely: "The perceptions of victims and of those who, however remotely, might be victimizers, tend to be quite different."[14] It is how we approach that difference that is the key to understanding injustice.[15]

In less than a paragraph, Shklar has pruned back the ethical thicket to two branches: *agency* and *perspective*. Injustice, in political terms, demands an accountable party, or in moral terms, someone to blame. Whether an agent should be held culpable in either sense will involve a set of interrelated questions touching on causation, foreseeability, intent, duty to others, and so on. Such inquiries, as Shklar implies, rely on scientific and social investigations (where social investigation would include applications of "ideology or interpretation").[16] If the agent is within a government's jurisdiction (by which I mean to exclude the supernatural and other parties

12. *Id.*

13. *Id.* at 50. Shklar evidently believed there was a thin line between a blameworthy failure and a reasonable omission. As she notes later, "Next to guilt, the most truly unjust and unwarranted response to accidents and disasters is scapegoating." *Id.* at 60. While the distinction between blameworthy failure and reasonable omission is important and worthy of study, I will not address it here. For the purpose of my argument, it is enough to acknowledge that in many cases the social vulnerabilities that increase hazard risks for some populations are rooted in known inequalities and that resulting harm in times of disaster is foreseeable. In such cases, a government's failure to act, when examined from the perspective of the injured as well as from other vantages, could plausibly be considered unjust.

14. *Id*. at 1.

15. *See id.* ("Neither the facts nor their meaning will be experienced in the same way by the afflicted as by mere observers or by those who might have averted or mitigated the suffering. These people are too far apart to see things in the same way.").

16. *Id*.

"beyond the law"), it is reasonable to say that justice may require state-induced punishment, compensation, or comprehensive reform. But determinations of accountability through agency cannot be totally objective, as the reference to "ideology" implies. So we require a second inquiry, this time an inquiry into human *perspective*; that is, we must determine the vantage from which we assess the scientific and social meanings gathered in the first inquiry on agency.

My purpose in Part I is to examine the *agency* side of disaster (Part II will tackle perspective). When a river leaps its banks and sweeps through an Iowa town, sending hundreds to homeless shelters, who or what do we attribute that to?[17] The rain? The zoning board? The homeowners? Society at large? The answer will not necessarily draw the line between misfortune and injustice (we need perspective for that), but it is the first step in understanding the scope of the problem. If the flood of an Iowa town is only a story about rain, there is not much beyond meteorology to discuss. If the flood damage is traceable to "society at large," nearly every policy consideration is on the table. For decades, the scholarly literature on disaster has been moving more toward the "socialization of disaster," particularly stressing the role of social inequality. But expanding the scope of agency makes the policy work harder, demanding more knowledge in more fields and forcing us to confront the imbalance of social power. It is a policy puzzle that traces its roots to the European Enlightenment and that today shapes our understanding of hurricanes, wildfires, and the nuclear accident in Fukushima, Japan.

B. From Rousseau with Love

Turn back the clock to November 1, 1755. That was the day of the Lisbon earthquake, which many experts consider to be "the first modern disaster."[18] That morning, on All Souls' Day, the city was rocked by an enormous convulsion, which was soon followed by a tsunami and a series of fires. The fabled city was flattened. Up to 70,000 residents were killed.[19] Eighty-five percent of the buildings

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17. *See* Robert R.M. Verchick & Abby Hall, *Adapting to Climate Change While Planning for Disaster: Footholds, Rope Lines, and the Iowa Floods*, 2011 BYU L. REV. 2203 (2011) (examining social causes of the 2008 floods in Iowa).

18. *See, e.g.*, Russell R. Dynes, *The Dialogue Between Voltaire and Rousseau on the Lisbon Earthquake: The Emergence of a Social Scientific View*, 18 INT'L J. MASS EMERGENCIES & DISASTERS 97, 97 (2000) ("[I]t is appropriate to call the Lisbon earthquake the first modern disaster.").

19. *Id.* at 99.

were gone.[20] Oliver Wendell Holmes, Sr.—father of the famous American jurist—captured the scene decades later:

> The ruins of Lisbon burned for six days. . . . The city, according to one observer, was reduced to "hills and mountains of rubbish still smoking." A Mr. Braddock, seeking higher ground after experiencing a sea wave that accompanied the noon shock, described victims with "their backs or thighs broken, others vast stones on their breasts, some lay in the rubbish and crying out in vain . . . for succour." Streams of refugees were fleeing the city, and the earth was not yet quiet.[21]

In the Age of Reason, Lisbon's unreasonable demise served up a case study for public thinkers of many stripes, their arguments taking flight in letters, sermons, newspaper columns, and poems.[22] Perhaps the most memorable exchange occurred between Voltaire and Jean-Jacques Rousseau. That conversation would eventually define the way that we—and our public officials—understand natural disasters in the twenty-first century.[23]

Before getting to that, remember that many, perhaps most, ordinary Europeans believed the earthquake was literally an act of God—a punishment, most likely, for the sins of an extravagant city.[24] Many clergy supported the theory.[25] Gabriel Malagrida, a Jesuit preacher, is credited with persuading crowds of residents to renounce past frivolity and to repent—at least until the Prime Minister, the

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20. LUCIEN G. CANTON, EMERGENCY MANAGEMENT: CONCEPTS AND STRATEGIES FOR EFFECTIVE PROGRAMS 12 (2007).

21. VERCHICK, *supra* note 3, at 1 (quoting Oliver Wendell Holmes, *First of November: The Earthquake Day*, (undated) (second ellipsis in original) *available at* http://www.phenomena.org.uk/earthquakes/earthquakes/lisbon.html). One of Holmes's best-known poems, "The Deacon's Masterpiece," offers a less serious take on that earthquake. *See* OLIVER WENDELL HOLMES, *The Deacon's Masterpiece, or The Wonderful One-Hoss Shay*, *in* ILLUSTRATED POEMS OF OLIVER WENDELL HOLMES 68, 68 (Macmillan and Co. 1885).

22. Dynes, *supra* note 18, at 99.

23. Some historians have wondered whether the Lisbon earthquake deserves the credit it often is given for prompting a cultural debate about the origins of natural disasters and other misfortunes. *See, e.g.*, Robert H. Brown, *"The Demonic" Earthquake: Goethe's Myth of the Lisbon Earthquake and Fear of Modern Change*, 15 GERMAN STUD. REV. 475, 478 (1992) (noting that skepticism toward theodic explanations for disaster pre-dates the Lisbon quake). Still, the symbolic importance of the earthquake in western thought is "undisputed." Kristian Cederval Lauta, *Exceptions and Norms: The Law on Natural Disasters* 43 n.42 (2012) (unpublished doctoral dissertation on file with the author); *see also* Dynes, *supra* note 18, at 99 (associating the Lisbon quake with an eruption of metaphysical debate in "popular literature" throughout Europe).

24. *See* Dynes, *supra* note 18, at 99 (noting that "[m]any of the themes" in the popular literature of the time "involved the idea that Lisbon was being punished for its sins, although such a case had its limits" and that "some saw the city as wicked, materialistic, and immoral").

25. T. D. KENDRICK, THE LISBON EARTHQUAKE 39 (1955).

Marquis de Pombal, had him executed.[26] Leibnitz, whose writings approached rationalism from a Christian perspective, embraced the central fairness of a numinous world; he sought to minimize the quake's importance by emphasizing instead the destructive power of human evil over acts of God. "A single Caligula, a Nero," he wrote in 1710, "has done more evil than an earthquake."[27] Alexander Pope gave Leibnitz's view a lyrical voice, arguing in verse that earthquakes and other natural calamities could not undercut the essential order of God's unfathomable love, stating: "One truth is clear, Whatever is, is RIGHT."[28]

Voltaire had politely dismissed such treacle for years, but after the great quake, he finally lost his cool. In a blistering poem called "The Lisbon Earthquake," Voltaire railed against any attempt to find justice or reason amid crumpled towers and "[w]omen and children heaped up mountain high."[29] Voltaire made clear that Germany's favorite humanist was running on empty:

> Leibnitz can't tell me from what secret cause
> In a world governed by the wisest laws,
> Lasting disorders, woes that never end
> With our vain pleasures, real sufferings blend;
> Why ill the virtuous with the vicious shares?
> Why neither good nor bad misfortunes spares?
> I can't conceive that "what is, ought to be."[30]

Rousseau had great affection for the elder Voltaire. But the poem troubled him deeply. He thought the poet was missing something and told him so in a protracted letter of near-Proustian density—a document that would become a classic in the field of disaster studies.[31] Despite the occasional earthquake or tsunami, Rousseau argued that "[m]ost of our physical ills are still our own work."[32] "Nature," he reminded Voltaire, "did not construct twenty thousand houses of six to seven stories [in Lisbon]."[33] "[I]f the inhabitants of this great city had been more equally spread out and

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26. Dynes, *supra* note 18, at 99; SHKLAR, *supra* note 9, at 52.

27. GOTTFRIED WILHELM LEIBNITZ, THEODICY 138 (Austin M. Farrer ed., E.M. Huggard trans., Cosimo Classics 2010) (1710).

28. ALEXANDER POPE, AN ESSAY ON MAN 9 (The Echo Library 2007) (1734).

29. VOLTAIRE, THE LISBON EARTHQUAKE 8 (E.R. Dumont 1901) (1755).

30. *Id.* at 16.

31. *See* Dynes, *supra* note 18, at 112 (describing view among social scientists that Rousseau's letter contains the "beginnings of a social science view of disaster" and noting that it prefigured current perspectives on disasters by 200 years).

32. *Id.* at 106 (quoting Rousseau's letter).

33. *Id.*

more lightly lodged," he continued, "the damage would have been much less and perhaps of no account."[34] Rousseau went on to speculate how residents' slow evacuation ("because of one wanting to take his clothes, another his papers, another his money") likely contributed to the death toll.[35] He criticized Voltaire for focusing so much on the destruction of a rich city—and one in which much of the damage occurred in wealthy neighborhoods—rather than on other, less sensational disasters. "You might have wished . . . that the quake had occurred in the middle of a wilderness," he wrote, "[b]ut we do not speak of them, because they do not cause any harm to the Gentlemen of the cities, the only men of whom we take account."[36] Then, rhetorically: "Should it be, that nature ought to be subjected to our laws, and that in order to interdict an earthquake, we have only to build a city there?"[37]

Voltaire never responded to Rousseau's concerns, dismissing their verbal jousts as "amusements."[38] But their conversation and its historical setting illustrate the ways in which educated people thought about disaster. Leibnitz represents the notion of divine justice, or theodicy. When disaster occurs, it should be accepted as either punishment or, perhaps, creative destruction. But it will never be controlled. In this view, science and engineering can do little to mitigate such threats because the true forces can never be understood. The path to risk mitigation is theological, not technological. Theodicy appears to have been the dominant view of large-scale disaster in most civilizations until at least the eighteenth century.[39]

Voltaire rejected theodicy, resigning himself to a universe that was both erratic and heartless. While he celebrated the power of reason, Voltaire did not expect to find it steering the cosmos. At most, he believed, science and technology could help human beings build temporary refuge on an otherwise disorderly planet.[40] "We must

34. *Id.*

35. *Id.*

36. *Id.*

37. *Id.*

38. *Id.*

39. Lauta, *supra* note 23, at 41.

40. Voltaire's awareness of the limits of reason and science led him to embrace a maxim, which he attributes to the prophet Zoroaster and which we might today associate with the precautionary principle: "In the doubt whether an action be good or bad, abstain from it." VOLTAIRE, THE WORKS OF VOLTAIRE, VOL. VII (PHILOSOPHICAL DICTIONARY PART 5) 299 (1764), *available at* http://oll.libertyfund.org/?option=com_staticxt&staticfile=show.php%3

cultivate our garden," says Voltaire's hero near the end of *Candide*.[41] But gardens have gates; beyond them, the woods are just as frightening as before.

Finally, Rousseau offers his own take, which sociologist Russell Dynes calls "the first truly social scientific view of disaster."[42] Catastrophe is driven not by God, or by nature, but by society. By insisting that "[m]ost of our physical ills are still our own work,"[43] Rousseau anticipates today's hazard-mitigation experts by centuries. Note Rousseau's attention to the city's design and to human behavior. He criticizes the concentration of multi-story dwellings near the Ribeira Palace, the center of government and commerce; the irrational behavior of evacuees, putting treasure above survival; and (implicitly) journalists' misplaced emphasis on misfortunes affecting the rich and powerful. And for Rousseau—who, in contrast to the celebrated Voltaire, toiled in obscurity and poverty—it is not surprising to see themes of class pervade each of his insights. Rousseau's argument moves the center of inquiry from the *physical hazard* to the *social risk*. Understanding physical hazard is the focus of Voltaire's nature-based argument; it suggests an alliance with the natural sciences—seismology, climatology, volcanology, and the like. Understanding social risk similarly relies on the natural sciences, but as we will see, it also requires significant investments in social science—psychology, geography, political science, economics—as well as a healthy dose of philosophy and ethics.

The story of Lisbon suggests a progression from theodicy to natural science, and later to social science. The city's destruction roused many citizens from a complacency that had allowed them to grow too comfortable with aristocracy and vague notions of fate. In the aftermath, citizens demanded more of government and began

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Ftitle=1660&chapter=202509&layout=html&Itemid=27. He warned against overconfidence in science, sometimes making the point with humor, as in this imagined exchange between a princess and her reluctant physician:

> Physician: Let nature be your first physician. It is she who made all. Of those who have lived beyond a hundred years, none were of the faculty. The king of France has already buried forty of his physicians, as many chief physicians, besides physicians of the establishment, and others.
>
> Princess: And, truly, I hope to bury you also.

VOLTAIRE, THE WORKS OF VOLTAIRE, VOL. VI (PHILOSOPHICAL DICTIONARY PART 4) 169 (1764), *available at* http://oll.libertyfund.org/?option=com_staticxt&staticfile=show.php%3Ftitle=355&chapter=62762&layout=html&Itemid=27.

41. VOLTAIRE, CANDIDE 87 (Stanley Appelbaum ed., Dover Publ'ns 1991) (1759).

42. Dynes, *supra* note 18, at 106.

43. *Id.*

seeing themselves as agents of change in their environment.[44] In response, the Marquis de Pombal immersed himself in the practical details of reconstruction and launched one of the first scientific inquiries into the mechanics of earthquakes.[45] "Zoning rules were imposed, as were Europe's first building codes for seismic events."[46]

Danish legal scholar Kristian Lauta has argued that these three views describe a Kuhnian "paradigm shift"[47] in which the focus of disaster management leaps from divine law to natural hazard to social risk.[48] Without doubt, the trend in American and international research leans strongly toward the social mechanism. Assessments of today's disaster risks have, according to sociologist Robert Bolin, correctly "shift[ed] the analysis of disasters away from the physical hazard agent and a temporally limited view of disasters as 'unique' events separate from the ongoing social order."[49] British geographer Mark Pelling, writing for the United Nations Development Programme, dismissed the very notion of a natural disaster, explaining that "natural disasters are in fact social disasters waiting to happen that may be triggered by a particular natural force."[50]

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44. *See id.* at 113–14 (describing how the Lisbon earthquake strengthened an emerging trend toward the "modern state" in which the government "assumed collective responsibility" for the consequences of the disaster).

45. VERCHICK, *supra* note 3, at 1.

46. *Id.*

47. The term "paradigm shift" was first used by philosopher Thomas Kuhn to describe the moment when a discipline's conceptual continuity is interrupted by a revolutionary insight and reframing. *See* THOMAS KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS 85 (Otto Neurath ed., 1970) (1962) (introducing the term).

48. Lauta, *supra* note 23, at 39–47.

49. Bob Bolin, *Race, Class, Ethnicity, and Disaster Vulnerability*, *in* HANDBOOK OF DISASTER RESEARCH 113, 114 (Havidán Rodrìguez, Enrico L. Quarantelli & Russell R. Dynes eds., 2007).

50. Sammy Zahran, Samuel D. Brody, Walter Gillis Peacock, Arnold Vedlitz & Himanshu Grover, *Social Vulnerability and the Natural and Built Environment: A Model of Flood Casualties in Texas*, 32 DISASTERS 537, 555 (2008); *see also* Bolin, *supra* note 49, at 114 (quoting ENRICO L. QUARANTELLI, DISASTER PREVENTION AND MITIGATION IN LADA: PROBLEMS AND OPTIONS IN PLANNING AND IMPLEMENTING IN COMPOSITE COUNTRY 18 (1990) ("[T]here can never be a natural disaster; at most there is a conjuncture of certain physical happenings and certain social happening.").

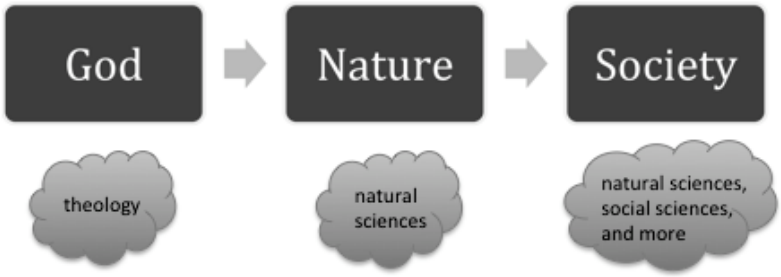

Figure 2. The Agents of "Natural Disaster" and Related Investigative Disciplines[51]

But in the broader public debate—particularly in politics—the three explanations co-exist. Theodicy may seem old-fashioned, but it still blows a loud horn. Christian evangelist Pat Robertson infamously attributed the 2010 earthquake in Haiti (which killed more than 300,000 people) to that nation's "pact to the devil."[52] In 2011, while running for president, Congresswoman Michelle Bachmann suggested that Hurricane Irene was God's way of calling attention to America's economic problems.[53] (She later claimed to be joking.[54]) That same year, Texas Governor Rick Perry responded to an outbreak of hundreds of wildfires in his state by officially declaring three "Days of Prayer for Rain in the State of Texas."[55] After Hurricane Katrina, religious leaders from many faiths (Protestant, Catholic, Jewish, Muslim) hailed the storm as a sign of divine punishment, although they did not always agree on what was being punished.[56] (The "gay

51. This diagram is inspired by Lauta, *supra* note 23, at 47, Table of Disaster Paradigms (associating three stages of disaster understanding with three different epistemological aims).

52. David Waters, *Haiti, the Devil and Pat Robertson*, WASH. POST, Jan. 13, 2010, *available at* http://onfaith.washingtonpost.com/onfaith/undergod/2010/01/haiti_the_devil_and_pat_roberton.html.

53. Adam C. Smith, *Michelle Bachmann Rally Draws over 1,000 in Sarasota, but some Prefer Rick Perry*, TAMPA BAY TIMES, Aug. 29, 2011, http://www.tampabay.com/news/politics/national/hundreds-turn-out-for-bachmann-rally-in-sarasota-but-some-prefer-perry/1188559.

54. Sarah Wheaton & Trip Gabriel, *Bachmann Plays Down Comments Linking Disaster and Deficits*, N.Y. TIMES (Aug. 29, 2011, 1:41 PM), http://thecaucus.blogs.nytimes.com/2011/08/29/bachmann-plays-down-comments-linking-disasters-and-deficits.

55. Manny Fernandez, *Texas Rally Renews Debate over the Boundaries of Perry's Faith*, N.Y. TIMES, Aug. 5, 2011, at A9, *available at* http://www.nytimes.com/2011/08/06/us/politics/06perry.html?pagewanted=all.

56. *See* Michelle Krupa, *Pope Promotes Cleric Who Called Katrina God's Punishment for Sin in New Orleans*, NEW ORLEANS TIMES-PICAYUNE, Jan. 31, 2009, http://www.nola.com/

lifestyle" and U.S. policy in the Middle East were just two of the options.[57]) Around the same time, New Orleans's own mayor alleged that destruction in his city proved that "God was mad at America."[58] Many citizens seemed to agree. A national poll conducted by ABC News after Katrina found that nearly a quarter of those surveyed believed hurricanes like Katrina and Rita were "deliberate acts of God."[59]

Days after the New Orleans flood, President George W. Bush claimed on national television that he did not think anyone could have "anticipated the breach of the levees."[60] His uninformed statement suggested a world that Voltaire knew well—where nature's force is dazzling and basically unknowable. When Governor Perry sought federal aid for combating the 2011 wildfires, he too seemed caught off guard. His office emphasized the state's unprecedented drought, the agonizing dry winds, and other phenomena; but the governor avoided any conversation about the human factors that likely made things worse: his decision to slash local firefighting budgets, residential sprawl, and, of course, global warming.[61]

Questions of agency linger in Japan as the details of the Fukushima Dai-ichi nuclear accident continue to unfold. Early on,

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news/index.ssf/2009/01/pope_promotes_cleric_who_calle.html (profiling a Catholic priest, now a bishop, who claimed Katrina is punishment for New Orleans's "tolerance of homosexuality"); Brian Kaylor, *Fundamentalists View Hurricane Katrina as God's Punishment*, ETHICS DAILY, Sept. 9, 2005, http://www.ethicsdaily.com/fundamentalists-view-hurricane-katrina-as-gods-punishment-cms-6269 (reporting on religious leaders from Christian, Jewish, and Muslim faiths who see Katrina variously as punishment for homosexuality, abortion, general "wickedness," and "U.S. support for the withdrawal of Gaza"). For more examples and a thoughtful discussion of theodicy, natural disaster, and American politics, see MICHAEL ERIC DYSON, COME HELL OR HIGH WATER: HURRICANE KATRINA AND THE COLOR OF DISASTER 179–99 (2006).

57. *See* Kaylor, *supra* note 56.

58. Transcript of Mayor Ray Nagin's Speech, http://www.nola.com/news/t-p/stories/011706_nagin_transcript.html (last visited Oct. 2, 2012).

59. Shushannah Walshe & Matthew Jaffe, *Michelle Bachmann Jokes Hurricane Irene Is God's Warning to Washington; Campaign Says She was Joking*, ABC NEWS (Aug. 29, 2011), http://abcnews.go.com/Politics/michele-bachmann-irene-gods-warning-washington-campaign-joking/story?id=14404962#.T-XZKI4Zz-A.

60. *See Katrina Forecasters Were Remarkably Accurate*, NBC NEWS, http://www.msnbc.msn.com/id/9369041/ns/us_news-katrina_the_long_road_back/t/katrina-forecasters-were-remarkably-accurate/#.T-YoDY4Zz-A (last visited Sept. 25, 2012) (quoting a statement from a news interview).

61. Patrik Jonsson, *Politics of Fighting Wildfire: Did Rick Perry's Texas Do Enough on Its Own?* (Sept. 9, 2011), http://www.csmonitor.com/USA/Politics/2011/0909/Politics-of-fighting-wildfires-Did-Rick-Perry-s-Texas-do-enough-on-its-own; *see also Barack Obama Slams Rick Perry on Climate Change, Citing Texas Wildfires*, POLITIFACT, http://www.politifact.com/truth-o-meter/statements/2011/sep/28/barack-obama/barack-obama-slams-rick-perry-climate-change-citin (last visited Sept. 25, 2012).

executives at Tokyo Electric Power Company (TEPCO) depicted the disaster as an unforeseeable event caused almost entirely by a "once in a millennium" tsunami.[62] But a report released in the summer of 2012 by the Fukushima Nuclear Accident Independent Investigation Commission repudiated that version of events.[63] Instead the Commission found that the plant's external power lines and "some key safety features" were knocked out by the earthquake—a predictable event that had not been adequately prepared for—before the tsunami waves hit.[64] The Commission also cited evidence that the earthquake might have caused a dangerous coolant leak in one of the reactors.[65] Better earthquake standards, the Commission implied, could have prevented part of the calamity.[66] The report accused TEPCO and regulators of ignoring some safety regulations and conspiring to "take the teeth out of regulations."[67] An introductory statement by the Commission's chairman went so far as to implicate some aspects of Japanese culture, criticizing its "groupism," its tendency to suppress dissent, and its expectation of "reflexive obedience."[68] "[Fukushima] was a profoundly manmade disaster – that could and should have been foreseen and prevented," wrote the chairman, "[a]nd its effects could have been mitigated by a more effective human response."[69]

Examples like these reveal the contested nature of disaster narratives. While researchers and policymakers see disasters as social occurrences, elected officials, religious leaders, and others have an interest in accessing a wider range of explanations. Some may even deploy narratives in cynical ways to direct blame on a disfavored group or policy, or to avoid being blamed themselves. Even when a narrative is embraced sincerely, it ultimately reflects an ideology (religious, scientific, sociological) that cannot be avoided. In this way, all disaster narratives feed off the cultural environment and are, as a critical theorist might say, "socially constructed." What is important,

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62. Hiroko Tabushi, *Inquiry Declares Fukushima Crisis a Man-Made Disaster*, N.Y. TIMES, July 5, 2012, http://www.nytimes.com/2012/07/06/world/asia/fukushima-nuclear-crisis-a-man-made-disaster-report-says.html.

63. FUKUSHIMA NUCLEAR ACCIDENT INDEPENDENT INVESTIGATION COMMISSION, OFFICIAL REPORT (2012), *available at* http://www.nirs.org/fukushima/naiic_report.pdf.

64. *Id.* at 17, 30.

65. *Id*.

66. *Id.* at 16.

67. *Id.* at 20.

68. *Id.* at 9.

69. *Id*.

in my view, is that researchers cannot just rely on a Kuhnian paradigm-leap to catapult disaster law into a social-vulnerability mindset. Too many people with influence have too many other ideologies and incentives. If we want law to pay more attention to social vulnerability, we have to marshal the evidence and the moral arguments to build the case. Toward that end, we should examine in detail the ways in which social vulnerability contributes to community hazard.

C. Anatomy of a Hazard

We can think of "community hazard" as a combination of a community's "physical vulnerability" and its "social vulnerability."[70] Here, "community" means, as a geographer might put it, "the totality of social system interactions" contained within a "defined geographic space."[71] Depending on one's interest, that could be anything from a neighborhood, a census tract, a city, or a county. Physical vulnerability refers to a community's physical exposure to a place-based risk—for example, a flood, an earthquake, or a wildfire. Physical vulnerability should be read to include "geophysical characteristics" (geology, hydrology, climate, and so on), as well as important aspects of the built infrastructure that, if they failed, would present their own difficulties (such as a dam or a nuclear facility). Social vulnerability refers to the susceptibility of a community's population groups to the impacts of a hazard. This susceptibility, as Susan Cutter defines it, "is not only a function of the demographic characteristics of the population (age, gender, wealth, etc.), but also more complex constructs such as health care provision, social capital, and access to lifelines (e.g., emergency response personnel, goods, services)."[72]

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70. Here I am simplifying a relationship originally described by sociologists Susan Cutter and Christopher Emrich, aware that my use here is less precise than theirs. *See* Susan L. Cutter & Christopher T. Emrich, *Moral Hazard, Social Catastrophe: The Changing Face of Vulnerability Along the Hurricane Coasts*, ANNALS AM. ACAD. POL. & SOC. SCI. 102, 107 fig. 1 (2006), *available at* http://ann.sagepub.com/content/604/1/102 (depicting a conceptual framework in which "place vulnerability"—what I call "hazard"—follows from "biophysical vulnerability" and "social vulnerability," which in turn follow from a variety of precursors).

71. Susan L. Cutter, Lindsey Barnes, Melissa Berry, Christopher Burton, Elijah Evans, Eric Tate & Jennifer Webb, *A Place-Based Model for Understanding Community Resilience to Natural Disasters*, 18 GLOBAL ENVTL. CHANGE 598, 599 (2008).

72. Cutter & Emrich, *supra* note 70, at 103 (citation omitted). My use of the terms "physical vulnerability" and "social vulnerability" comes from the social science literature. In particular, *see id.* at 106, which contrasts physical vulnerability and vulnerability from "social aspects." There is, however, some variation among researchers as to what these terms include.

There are many ways to nest these terms. The social science literature offers a playground of hoops, boxes, and Möbius ribbons to help visualize these relationships.[73] Sometimes these frameworks contradict each other.[74] But for our purposes, we can describe the relationship of hazard and vulnerabilities as shown in Figure 3 below.

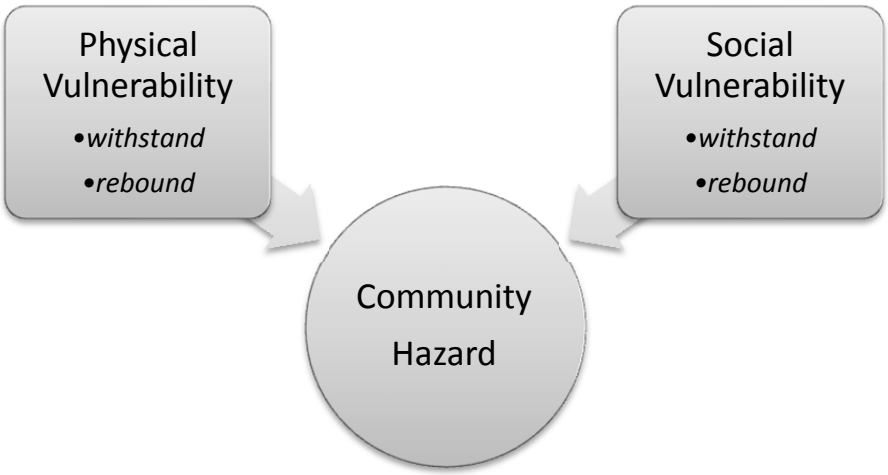

Fig. 3. Components of Community Hazard[75]

Note that my use of the term "vulnerability," whether physical or social, suggests a present and future tense: it refers both to a community's ability to *withstand* an immediate assault and its ability to *rebound* from it afterwards.[76] A mobile home park built in a

73. *See, e.g.*, *id.* at 107 fig.1 (depicting a "conceptual framework" illustrating "vulnerability of places"); Carl Folke, *Resilience: The Emergence of a Perspective for Social-Ecological Systems Analyses*, 16 GLOBAL ENVTL. CHANGE 253, 258 fig.1 (2006) (depicting "nested adaptive renewal cycles"); Colin Polsky, Rob Neff & Brent Yarnal, *Building Comparable Global Change Vulnerability Assessments: The Vulnerability Scoping Diagram*, 17 GLOBAL ENVTL. CHANGE 472, 479 fig.4 (2007) (providing an example of a Vulnerability Scoping Diagram).

74. *See* Cutter et al., *Understanding Community Resilience*, *supra* note 71, at 600 fig.1 (Venn diagrams depicting various and sometimes contradictory understandings of the relationship "between vulnerability, resilience, and adaptive capacity" within the social science literature).

75. I derive this schematic, adding my own modifications, from a more comprehensive visual presented in Cutter & Emrich, *supra* note 70, at 107 (showing a conceptual framework for place-based vulnerability).

76. At the risk of confusing readers, I should note that social scientists sometimes use the term "vulnerability" only to describe the ability to withstand, and the term "resilience" to describe the ability to rebound. *See, e.g.*, Cutter et al., *Understanding Community Resilience*, *supra* note 71, at 599 (using the terms this way). But the term vulnerability is also sometimes used as I do above. *See* Cutter & Emrich, *supra* note 70, at 106 (using vulnerability as including the "characteristics of the people and places that make them less able to cope with and rebound

floodplain, surrounded by unpaved roads, illustrates physical vulnerability in both senses. The park's physical location puts fragile structures in the path of raging water. The unpaved roads, prone to washouts, will make it harder for residents to return with the equipment needed to rebound and rebuild. If the park's inhabitants are poor and elderly, the community will suffer from social vulnerability. Residents who are less physically mobile will be unable to secure the patio furniture or rescue the stranded dog. Those without cars or extra cash will have trouble evacuating. In the aftermath, poor health and fixed incomes will also impede residents' ability to rebound. Because physical and social vulnerability affect all stages of a disaster event, from planning to recovery, they form an essential aspect of the Circle of Risk Management, introduced earlier.[77]

Physical and social vulnerabilities obviously interact: sometimes a community's protective physical environment is exploited and destroyed because residents are too powerless to do anything about it. (Imagine a town where unchecked logging on the outskirts increases the risk of mudslides.) And in some communities poverty is closely linked to a lack of natural resources and impoverished physical surroundings (as in some tribal communities). In this sense—despite the nomenclature—both types of vulnerability have important social dimensions.[78]

The community-hazard framework expands the scope of disaster policy in significant ways. In this view, the factors are not just geophysical; they are also economic, social, and political. They involve a community's natural infrastructure as well as its built infrastructure. The protection of soil-stabilizing forests and storm-slowing coastal marshes becomes an important consideration in disaster policy.[79] So too do bridge maintenance and regular

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from disaster events"); BEN WISNER, PIERS BLAIKIE, TERRY CANNON & IAN DAVIS, AT RISK: NATURAL HAZARDS, PEOPLE'S VULNERABILITY AND DISASTERS 9 (2004) (defining vulnerability to include the capacity "to recover from the impact of a natural hazard").

77. *See supra* Figure 1.

78. *See* Cutter et al., *Understanding Community Resilience*, *supra* note 71, at 602 ("Natural systems, social systems, and the built environment are interconnected and therefore their separation is arbitrary. Human actions impact the state of the environment and, in turn, a degraded environment provides less protection against hazards.").

79. *See* VERCHICK, *supra* note 3, at 16–24 (describing the importance of natural infrastructure in reducing disaster risk and recommending polices to protect this infrastructure); *see also* Cutter et al., *Understanding Community Resilience*, *supra* note 71, at 601 ("The resilience of a community is inextricably linked to the condition of the environment and the treatment of its resources . . . .").

improvements to data and cell-phone networks. This leads us to see the relationship between risk-reduction and the broader concept of "sustainability." The framework's emphasis on the ability to rebound as well as withstand reveals the relationship between risk-reduction and the broader concept of "resilience" in all its physical, social, and economic aspects.[80] Within this broader framework—encompassing environmental protection, public works, and more—disaster research has gradually homed in on one social factor of critical concern: inequality.

D. The Effects of Social Vulnerability

Disaster research as an academic discipline developed after World War II, prompted by studies of civilian population centers that had been subjected to sustained military attacks, including Hiroshima and Nagasaki after the U.S. nuclear attacks.[81] In 1963, sociologists Enrico Quarantelli and Russell Dynes founded the Disaster Research Center at Ohio State University. That center, now located at the University of Delaware, inspired the formation of several other such centers in the United States, establishing the country as an early frontrunner in the field.[82] In keeping with conventions and funding priorities of the time, hardly anyone studied the effects of race or class on hazard vulnerability. But there were exceptions. In his 1958 classic, *Tornadoes over Texas*, Henry Estille Moore investigated twisters in central Texas and noted that African-Americans suffered greater losses and higher injury rates than whites.[83] Roy Clifford's 1956 investigation of the flooding of two Texas-Mexico border towns found cultural differences in evacuation behavior, including a greater reluctance within the Mexican community to accept "'official' warnings and aid."[84]

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80. I use "resilience" here in the simple dictionary sense of "an ability to recover from or adjust easily to misfortune or change." *Resilience Definition*, MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 1060 (11th ed. 2004). In the social science literature on disaster, the term, while used in more specialized ways, is also confusing. *See* Cutter et al., *Understanding Community Resilience*, *supra* note 71, at 599 ("Like vulnerability, multiple definitions of resilience exist within the literature, with no broadly accepted single definition." (citations omitted)); *id.* at 600 ("The relationship between vulnerability, resilience, and adaptive capacity is still not well articulated . . . .").

81. BOLIN, *supra* note 49, at 119.

82. *Id.*

83. HARRY ESTILLE MOORE, TORNADOS OVER TEXAS: A STUDY OF WACO AND SAN ANGELO IN DISASTER 146–52 (1958).

84. *See* ROY A. CLIFFORD, THE RIO GRANDE FLOOD: A COMPARATIVE STUDY OF BORDER COMMUNITIES IN DISASTER 76–77 (1956), *available at* http://archive.org/stream/

In the 1970s, a new agenda for hazards research turned a spotlight on racial, ethnic, and socioeconomic differences in disaster response and recovery. An important 1977 study investigating a catastrophic flood in South Dakota was among the first to examine the role of class and other characteristics in people's ability to find temporary housing.[85] Disaster researchers since then have published a variety of quantitative and statistical analyses that examine social characteristics as they relate to disaster.

Their studies show that at nearly every point along the Circle of Risk Management, social vulnerability loads the dice.[86] The literature tells us that low-income and minority populations are less likely to be prepared when disasters hit. Both groups are less likely to have first-aid kits, emergency food supplies, fire extinguishers, or evacuation plans.[87] They are similarly less likely to hold earthquake or flood insurance.[88] Studies also show social differences related to communications and response. Some suggest that minority and low-income households are less likely to receive official disaster warnings or even believe them.[89] When they do, they are less likely to act upon them.[90] This seems particularly true of evacuation orders, which require resources (transportation, cash, a place to stay) that are less common in disadvantaged populations. Federal and local evacuation planning has long underestimated the needs of those without private transportation and has proven terribly inadequate for the elderly, the poor, and the disabled.[91]

But it is the research on physical impacts that is particularly devastating. Studies consistently show that in a disaster, poor people

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riograndefloodco00clifrich#page/n1/mode/2up. Clifford's study focused on the towns of Eagle Pass, located in Maverick County, Texas, and Piedras Negras, located in the Mexican state of Coahuila. *Id.* at 7. Of the residents in Eagle Pass, 77% had "Spanish surnames" and about 25% were foreign-born. *Id.* The town's culture reflected what Clifford described as "Mexican ways of life . . . intermeshed with English and 'Anglo' customs." *Id.* In contrast, the residents of Piedras Negras, were nearly all Hispanic and born in Mexico. In addition to differences in ethnicity and culture, Clifford noted that the average income in Eagle Pass was thought to be much higher than in Piedras Negras. *Id.* at 7–8. The levels of education were roughly the same. *Id.* at 7.

85. *See* J. EUGENE HAAS, ROBERT W. KATES & MARTYN J. BOWDEN, RECONSTRUCTION FOLLOWING DISASTER 176–77 (1977).

86. *See supra* Figure 1.

87. Zahran et al., *supra* note 50, at 539.

88. *Id*. at 539–40.

89. *Id.* at 540.

90. *Id*.

91. For more on the inadequacy of evacuation planning, see ROBERT D. BULLARD & BEVERLY WRIGHT, THE WRONG COMPLEXION FOR PROTECTION: HOW THE GOVERNMENT RESPONSE TO DISASTER ENDANGERS AFRICAN AMERICAN COMMUNITIES 280–87 (2012).

and people of color are more likely to suffer property damage, injury, and death.[92] In the aftermath of Hurricane Katrina, for instance, the damaged areas of New Orleans were 75% African-American, while undamaged areas were 46.2% African-American.[93] Reported deaths in New Orleans were nearly proportional to the city's racial demographics.[94] But often that is not the case. Examining 832 floods in Texas from 1997 to 2000, a research team led by demographer Sammy Zahran found that a one unit increase in the level of social vulnerability in a county raised the odds of death or injury by 42.4%.[95] Inadequate preparation and evacuation plans are just part of the problem. The most significant factor, the literature suggests, is that low-income and minority populations are simply more likely to live in older, denser, disaster-prone neighborhoods, with shoddy housing and inadequate services.[96]

Research also documents important disparities in the recovery process. After Katrina, the Bush administration suspended federal wage protections and federal affirmative-action policies in affected states, ostensibly to stimulate clean-up and reconstruction.[97] But the controversial policy had a punishing effect on the local workforce.[98]

Government assistance programs—often crucial in the wake of a large catastrophe—tend to favor middle-class homeowners over less

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92. *Id.* at 94–99. "On the physical consequences of Hurricane Audrey (June 1957), Bates et al. (1962) discovered significantly higher death rates for Blacks (322 deaths per 1,000) compared to Whites (38 deaths per 1,000). Wright et al. (1979) find [sic] that lower income households experience significantly higher rates of injury, particularly with regard to flood and earthquake events. Numerous studies indicate that socially vulnerable populations suffer greater property loss in disaster events. Scholars theorize that minority citizens are affected unevenly by disasters because they are more likely to reside in older, poorer, high-density, segregated, and disaster-prone areas (Foley, 1980; Bolin, 1986; Bolin and Bolton, 1986; Cochrane, 1975; Logan and Molotch, 1987; Massey and Denton, 1993; Phillips, 1993; Phillips and Ephraim, 1992; Peacock and Girard, 1997; Charles, 2003; Peacock, Dash and Zhang, 2006)." Zahran, et al., *supra* note 50, at 540.

93. MANUEL PASTOR ET AL., IN THE WAKE OF THE STORM: ENVIRONMENT, DISASTER AND RACE AFTER KATRINA 9 (2006), *available at* http://www.hefn.org/resources/files/In%20the%20Wake%20of%20the%20Storm.pdf. In the larger metropolitan area, damaged areas were 45.8% African-American, while undamaged areas were only 26.4% African-American. *Id.*

94. VERCHICK, *supra* note 3, at 130.

95. Zahran et al., *supra* note 50, at 552.

96. *Id*. at 540.

97. NAOMI KLEIN, THE SHOCK DOCTRINE 410 (2007).

98. *See generally* Haley E. Olam & Erin S. Stamper, *The Suspension of the Davis Bacon Act and the Exploitation of Migrant Workers in the Wake of Hurricane Katrina*, 24 HOFSTRA LAB. & EMP. L. J. 145 (2006) (explaining how the suspension of the Davis-Bacon Act estranged local workers and exploited migrant workers).

affluent renters or the homeless. Studies following the 1989 Loma Prieta Earthquake in the San Francisco Bay area have documented the many ways that federal assistance programs failed to meet the needs of the homeless, Latino farm workers, and low-income African-Americans.[99] Louisiana's post-Katrina assistance programs raised similar concerns. Using federal funds, the state developed programs to promote the construction of rental housing and to compensate homeowners for the costs of rebuilding. Because of funding limitations, the rental-repair programs were only able to support the repair of less than one-third of the 82,000 rental units lost to Hurricanes Katrina and Rita.[100] As for homeowners, nearly three-quarters of Road Home applicants had gaps between the received rebuilding resources and the actual costs of repair.[101] The average shortfall for African-Americans was roughly $8000 more than it was for whites.[102] This discrepancy was caused by the grant formula, which was based on a home's pre-storm value, and African-Americans often lived in housing markets with depressed values.[103]

Poor people and people of color also tend to suffer more psychological effects from disaster than victims who are wealthier or white.[104] According to the literature, "poor, minorities, and single mothers may already feel a lack of control over their lives, and the dislocation and increased uncertainty about the future add to underlying and persistent stress."[105] Elderly African-Americans, in particular, have been found to recover more slowly from "psychosocial" trauma than whites, an effect partially attributable to financial insecurity.[106]

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99. BOLIN, *supra* note 49, at 122. For more on the Loma Prieta Earthquake and social vulnerability, see VERCHICK, *supra* note 3, at 110.

100. *See* KALIMA ROSE, ANNIE CLARK & DOMINIQUE DUVAL-DIOP, A LONG WAY HOME: THE STATE OF HOUSING RECOVERY IN LOUISIANA 2008, at 15 (2008), *available at* http://www.policylink.org/atf/cf/%7B97c6d565-bb43-406d-a6d5-eca3bbf35af0%7D/EQUITYATLAS.PDF ("[O]nly 1 in 3 affordable rentals in the New Orleans area will be replaced.").

101. *Id.* at 42.

102. *See id.* (showing graphically that the average estimated gap for African-Americans was $39,082 and the average estimated gap for whites was $30,863.).

103. Hurricane Katrina, of course, launched an armada of studies on disaster and social vulnerability. For a discussion of the many ways that people's experiences in disasters are affected by class, race, ethnicity, gender, age, and other factors, see VERCHICK, *supra* note 3, at 113–29.

104. PASTOR ET AL., *supra* note 93, at 22 (citing studies).

105. *Id.*

106. *Id.*

While social scientists emphasize the vulnerabilities of race and class, we should not forget that other demographic characteristics are also important. Age is often a big factor. Because the elderly tend to have more health problems, reduced mobility, and fixed incomes, they are often at higher risk of death or injury during disasters. Following the 2003 European heat wave, which killed an estimated 70,000 people, the World Health Organization reported that "in European cities, the elderly suffered the greatest effects of heat-waves," adding that elderly women bore a higher risk of dying than elderly men.[107] In New Orleans, the elderly made up 60 percent of Katrina's death toll.[108] In its investigation of fatalities from the 2011 Japan tsunami, the Japanese newspaper, *Yomiuri Shimbun*, estimated that more than 65 percent of those who died were over sixty years old.[109] Children also tend to be more vulnerable in times of disaster and recovery. Physically, their smaller bodies put them at higher risk for allergies, infections, malnutrition, and other problems.[110] Children recovering from disasters often require emotional support and counseling to help them process confusing or frightening experiences.[111]

Gender can also play a key role. Women, for instance, were hit particularly hard by Hurricane Katrina. Of the 180,000 Louisianans who lost their jobs after the storm, 103,000—or 57 percent—were female.[112] Of the thousands of households that lost public housing services in New Orleans when they were summarily closed after the storm, 88 percent were headed by women.[113] Men's median annual income rose after the storm, in part due to the rise in heavy-labor jobs like demolition and construction.[114] Women, who were more likely to

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107. *Heat Threatens Health: Key Figures for Europe*, WORLD HEALTH ORG. REG'L OFFICE FOR EUR., http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/Climate-change/activities/prevention,-preparedness-and-response/heathealth-action-plans/heat-threatens-health-key-figures-for-europe (last visited Oct. 7, 2012).

108. VERCHICK, *supra* note 3, at 130.

109. Murai, *supra* note 2, at 1852–56.

110. *See* VERCHICK, *supra* note 3, at 140–41 (discussing children's health issues after hurricane Katrina).

111. U.S. SUBSTANCE ABUSE AND MENTAL HEALTH SERVICES ADMINISTRATION, PSYCHOSOCIAL ISSUES FOR CHILDREN AND ADOLESCENTS IN DISASTERS 6 (2d ed. 2000), *available at* http://cretscmhd.psych.ucla.edu/nola/Video/MHR/Governmentreports/Psychosocial%20Issues%20for%20Children%20and%20Adolescents%20in%20Disasters.pdf.

112. SARAH VAILL, WOMEN'S FUNDING NETWORK & MS. FOUNDATION FOR WOMEN, THE CALM IN THE STORM: WOMEN LEADERS IN GULF COAST RECOVERY 3 (2006).

113. *Id.*

114. *Id.*

work in the healthcare, education, and hospitality sectors, saw their median income decline.[115] Such widespread destruction, of course, dramatically increased stress within families, predictably leading to soaring reports of domestic violence.[116] Indeed, research shows that evacuations and disasters are often accompanied by increases in violence against women and girls.[117]

E. The Distribution of Social Vulnerability

Although the abovementioned studies are invaluable, the big picture is still missing. Many of the studies focused on single events or small sets of events. Often they operated at the household or individual level. Few of them addressed larger features of the social and physical environment that were shared by all residents of a locality, such as climate, latitude, public services, and socioeconomic characteristics. Then, in the 1990s, a new wave of researchers pulled the camera back and captured a larger scene.

Their method, called "aggregate analysis," sought to capture the hazard risk of a whole community by combining a series of variables related to physical and social vulnerability, from geography to climate, from income and education levels to race and age. If performed systematically, these analyses could then be compared across the country. The hope was to develop a rough portrait of disaster risk in America. Geographer Susan Cutter is a leader in the field of "vulnerability science."[118] Her work over three decades has informed researchers and policymakers around the world. In 2003, she and her colleagues used aggregate-analysis techniques to develop a "social vulnerability index" (SoVI) to compare disaster risks in communities across the country.[119]

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115. *Id.*

116. Suzanne Batchelor, *Assault Risk Rises in Jammed Post-Katrina Homes*, WENEWS (June 22, 2006), http://womensenews.org/story/rape/060622/assault-risk-rises-in-jammed-post-katrina-homes#.UJb_kWdqN-Q.

117. *See, e.g.*, BARBARA GAULT ET AL., THE WOMEN OF NEW ORLEANS AND THE GULF COAST: MULTIPLE DISADVANTAGES AND KEY ASSETS FOR RECOVERY PART I. POVERTY, RACE, GENDER, AND CLASS 5 (2005), *available at* http://www.iwpr.org/publications/pubs/the-women-of-new-orleans-and-thegulf-coast-multiple-disadvantages-and-key-assets-for-recovery-part-i-poverty-race-gender-and-class (using 2004 figures); VAILL, *supra* note 112, at 10 (noting an "increase in domestic violence after the storms").

118. Cutter & Emrich, *supra* note 70, at 102.

119. Susan L. Cutter, Bryan J. Boruff & W. Lynn Shirley, *Social Vulnerability to Environmental Hazards*, 84 SOC. SCI. Q. 242, 254 (2003)

Cutter's team began by collecting socioeconomic data for 1990 for all 3141 counties in the United States.[120] Starting with more than 250 variables, they winnowed the field (through various statistical means) to forty-two independent variables—a set representing all factors identified in past vulnerability research.[121] The team identified a subset of the eleven most important variables, which "explained 76.4 percent of the total variance among all counties."[122] They were: (1) personal wealth, (2) age, (3) density of the built environment, (4) single-sector economic dependence, (5) housing stock and tenancy, (6) race—African-American, (7) ethnicity—Hispanic, (8) ethnicity—Native American, (9) race—Asian, (10) occupation, and (11) "infrastructure dependence" (as in being employed by a transportation service or public utility).[123] Weighting each variable equally, they developed an index of social vulnerability for each county.

On this basis, Cutter's team found that "[a]s expected, the vast majority of U.S. counties exhibit moderate levels of social vulnerability."[124] But some regions carried higher risk. With a few notable exceptions, the most vulnerable communities were located in the southern half of the country, stretching from southern California to Florida.[125] These regions not only had greater racial and ethnic variation but were also growing quickly, resulting in a crowded, flimsy housing stock.[126] The least vulnerable counties were located mainly in New England, along the eastern slopes of the Appalachian Mountains, and in the Great Lakes Region.[127] In all, 12.5 percent of U.S. counties were deemed "most vulnerable."[128] New York County (otherwise known as Manhattan) ranked first in vulnerability due to density as well as its racial, ethnic, and socioeconomic profiles.[129] Other high-risk counties included San Francisco County, Bronx County, and Benton County—home of the Hanford Nuclear Reservation—the economy of which was dominated by a single public

120. *Id.* at 249

121. *Id.* at 249, 251; Cutter & Emrich, *supra* note 70, at 106 (describing the 2003 study).

122. Cutter et al., *supra* note 119, at 251.

123. *Id.* at 252 tbl.3.

124. *Id.* at 255.

125. *Id.*

126. *Id*. For a map showing variations among all counties, see *id.* at 255 fig.2.

127. *Id.* at 256.

128. *Id.* at 255.

129. *Id.* at 255; Susan L. Cutter & Christina Finch, *Temporal and Spatial Changes in Social Vulnerability to Natural Hazards*, 105 PROC. NAT'L ACAD. SCI. 2301, 2303 (2008).

utility.[130] The safest bets, like Poquoson, Virginia, or Tolland, Connecticut, were more homogenous and often presented a face that was more "suburban, wealthy, white, and highly educated."[131]

Cutter later used the SoVI (with some modifications—notably, gender was added) to examine historical changes in countrywide vulnerability from 1960 to 2000.[132] She wanted to know if the nation had become more or less vulnerable, and how variations among regions had changed. Cutter's conclusions, published in 2008, are encouraging, but not completely so. Cutter and her co-author Christina Finch found that during the forty-year period, the factors that most consistently distinguished counties from their peers were density, race/ethnicity, and "socioeconomic status" (a term encompassing income, education level, home ownership, and other related characteristics).[133] This is good news in the sense that researchers concerned with the drivers of inequality have at least been focusing on the right things. In addition, Cutter and Finch identified a "steady reduction of social vulnerability" overall in the United States.[134] Colored maps in their report show bright red splotches (indicating the most vulnerable counties) over the Southwest, the upper Great Plains, the Lower Mississippi, Florida, and Hawai'i gradually fading to pink, or better, shifting to blue as the decades unfold.[135] In 1960, the most socially vulnerable populations were nested in the Deep South (for reasons of race, gender, and socioeconomic status), the Southwest (Native American country), and Florida (high elderly population).[136] By 2000, the nation's total social vulnerability had declined, but significant concentrations existed in the lower Mississippi Valley, the South Texas border lands, California's Central Valley, and the upper Great Plains.[137]

Most intriguing, Cutter and Finch were able to use these historic trends to project future distributions of social vulnerability. Extrapolating from the trends of 1960 to 2000, they imagined what the year 2010 would look like. Their projection showed continued problems in the Mississippi Valley, in the Southwest, and in

130. Cutter et al., *supra* note 119, at 255–56.
131. *Id.* at 256.
132. Cutter & Finch, *supra* note 129, at 2301–02.
133. *Id.*
134. *Id.* at 2301.
135. *Id*. at 2303 fig.1.
136. *Id.*
137. *Id.* at 2302.

California, but they also found that the upper Great Plains would remain the most dominant area of social vulnerability.[138] The *least* socially vulnerable counties, according to their calculations, would be located in Colorado, Nevada, and Idaho.[139] (Now that actual data for 2010 are available, Cutter has plans to verify these projections.[140])

It is important to note that these studies from 2003 and 2008 only examined social vulnerability. They did not consider the geophysical hazards associated with individual counties to see how residents' social vulnerability might be put to the test. Geographers are now examining these overlaps, too. After Katrina, for instance, Cutter and a colleague reexamined past social-vulnerability trends for the hurricane-ravaged parishes or counties in Louisiana, Alabama, and Mississippi.[141] They found that in 2000, Orleans Parish (where the city of New Orleans is located) had "the highest social vulnerability score of all Katrina-impacted coastal parishes or counties."[142] In fact, Orleans Parish was the *only* Katrina-impacted parish or county in those three states with a social vulnerability score that had actually *increased* in the forty years since 1960.[143]

In a more comprehensive study of geophysical and social overlaps, geographers Bryan Boruff, Christopher Emrich, and Susan Cutter combined a coastal erosion index developed by the U.S. Geological Survey (USGS) with a variant of the SoVI.[144] They were interested in how much geophysical vulnerability and social vulnerability each contributed to relative vulnerabilities of coastal counties.[145] Looking at all U.S. coastal counties (except for those on the Great Lakes and in Alaska and Hawai'i), they found a remarkable pattern. In the counties along the Pacific and Atlantic coasts, the vulnerability of coastal communities was most influenced by physical characteristics like relative sea-level rise, wave height, and shoreline erosion.[146] But in the Gulf Coast region, community

138. *See id.* at 2303 fig.1 (showing mapped projection for 2010).

139. *See id.* (showing mapped projection for 2010).

140. *Id.* at 2305.

141. Cutter & Emrich, *supra* note 70, at 105.

142. *Id*. at 107.

143. *Id.*

144. Bryan J. Boruff, Christopher Emrich & Susan L. Cutter, *Erosion Hazard Vulnerability of US Coastal Counties*, 21 J. COASTAL RES. 932, 932 (2005).

145. Researchers used two statistical techniques to determine the relative influence of physical factors and social factors in variations among the counties. For a description of their method, *see id.* at 935.

146. *Id.* at 939.

vulnerability was mostly determined by social characteristics like poverty, age, population density, and race.[147] In Orleans Parish—an area that is world-famous for its precarious *physical* geography—analysis showed that social factors made an *equal contribution* to the parish's overall vulnerability index.[148]

F. Crisis, What Crisis?

In the spring of 2003, after the overthrow of Saddam Hussein in Baghdad, television reports showed thousands of looters ransacking hospitals, schools, and the city's many cultural treasures, including Iraq's celebrated National Museum.[149] Speaking at a press conference, Secretary of Defense Donald Rumsfeld first tried to minimize the violence. Then he appeared to justify it, suggesting that the maelstrom was "part of the price" of political liberation.[150] Then in a fit of pique, he pronounced the euphemism for which the Secretary will always be known: "Stuff happens."[151] The message was simple: We are in a crisis here. The stakes are high and the consequences of our actions are hard to predict. You will not like everything you see happening, but the normal rules no longer apply. We are doing the best we can. Back off.

Secretary Rumsfeld was making the case for "crisis"—an extreme break from society's normal pattern. In a crisis, it is hard to hold an individual or government accountable because the consequences are unpredictable and government is barely in control. In times of real emergency, public officials justifiably wrest back control by imposing order and restricting freedoms in ways that would be unacceptable in other times. Such is the idea behind John Locke's famous "prerogative" by which a ruler may condone the destruction of "an innocent man's house" to prevent the spread of

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147. *Id.*

148. Cutter & Emrich, *supra* note 70, at 109–10 (describing findings from Boruff, Emrich, and Cutter's 2005 study).

149. John F. Burns, *A Nation at War: Looting*, N.Y. TIMES, Apr. 13, 2003, http://www.nytimes.com/2003/04/13/world/a-nation-at-war-looting-pillagers-strip-iraqi-museum-of-its-treasure.html?pagewanted=all&src=pm (reporting the looting of museums); *Baghdad Looting Continues*, VOICE OF AMERICA, Apr. 14, 2003, http://www.voanews.com/content/a-13-a-2003-04-12-29-baghdad-67458862/385490.html (reporting the looting of museums, schools, hospitals, and foreign embassies).

150. Sean Loughlin, *Rumsfeld on Looting in Iraq: 'Stuff Happens,'* CNN.COM (Apr. 11, 2003), http://articles.cnn.com/2003-04-11/us/sprj.irq.pentagon_1_looting-defense-secretary-donald-rumsfeld-coalition-forces?_s=PM:US.

151. *Id.*

fire.[152] The so-called Lockian Prerogative is today preserved in various laws permitting government discretion in "states of emergency."[153]

After the fall of Baghdad, Secretary Rumsfeld never did convince his critics; ultimately, they saw Iraqi violence less as an unpredictable crisis and more as a foregone conclusion.[154] After years of study and mapping exercises, today's geographers see most natural disasters the same way. Disasters are "socialized" catastrophes. They are seen not as random physical events of unavoidable misfortune, but as events with a deep social aspect involving policy choices, economics, and cultural behavior. More than ever before, their consequences can often be anticipated. Both the physical vulnerability and the social vulnerability of community risk have social dimensions. Physical vulnerability may include building standards, the state of roads and bridges, or the health of coastal wetlands. Social vulnerability is affected by socioeconomics, demographic characteristics, and similar factors.

This insight leads to a few points. First, if disaster risk has a social dimension, law and policy have a legitimate—even mandatory—role in managing it. Second, that management role is broad: it is not just about managing physical exposure (one piece of community vulnerability), but also about managing social vulnerability in its many aspects. Indeed, reducing hazard risk by addressing social vulnerability can in some cases be more efficient than attempting to reduce it by narrower, more traditional means. Educating or empowering a poor community, for instance, might be cheaper and might save more homes than building another storm pump or seawall in a more affluent area. The same idea goes for maintaining natural infrastructure like wetlands or forest buffers. Preserving these areas can be a more efficient way of "buying" security in some cases. Third, social vulnerability, as Susan Cutter says, is rooted in social inequality. So in a very basic way, increasing community resilience is about fighting injustice. What we mean by that is the subject of Part II.

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152. JOHN LOCKE, SECOND TREATISE ON CIVIL GOVERNMENT § 159 (1689, 1998); *see also* Lauta, *supra* note 23, at 75–76 (describing the Lockean Prerogative).

153. For an introduction to the law of federal emergency response, see FARBER ET AL., *supra* note 5, at 135–49.

154. *See, e.g.*, Frank Rich, Opinion, *Stuff Happens Again in Bagdad*, N.Y. TIMES, Sept. 24, 2006, at WK12, *available at* http://www.nytimes.com/2006/09/24/opinion/24rich.html ("Our blindness back in April 2003 seems ludicrous in retrospect.").

II. JUSTICE

A. Mind the Gap?

As we have seen, the gap between the socially resilient and the socially vulnerable in America is wide. Should we mind that? Let us return to Judith Shklar's distinction between misfortune and injustice. Shklar says that an important difference between the two involves agency—if there is no causative *and* blameworthy agent, there can be no injustice.[155] Part I demonstrates that social vulnerability is causative. Decades of research shows the sometimes determinative link that exists between social standing and a community's level of disaster risk. Social vulnerability can decide whether you escape a flood or get stuck on the roof, whether your apartment building survives the quake or pancakes into a sinkhole, or whether your loved ones spend the night in a secure shelter or in the intensive care unit.

Social scientists argue that by devoting more resources to reducing socioeconomic inequality and attending to the needs of vulnerable groups in times of disaster, government could reduce overall disaster risk.[156] It seems plausible that in some cases we could reduce disaster risk more affordably by steering more of our risk-reduction resources toward the social side of the equation. But does that mean that our current disaster policies, admittedly far from perfect, are *blameworthy*? Are they *unjust*?

The question is more than a thought experiment. As long as our failure to adequately address social vulnerability is seen as misfortune, fixing the problem will be framed as one of the many things we should do to help needy people, but, because of other priorities, never get around to doing. But if our failure to protect the vulnerable is an injustice—a breach of democracy's fundamental obligation to its citizens—the mission takes on an urgency that can be trumpeted in the press, agency planning sessions, and perhaps the courtroom. After two centuries, Mary Wollstonecraft is still right: "It is justice, not charity, that is wanting in the world!"[157]

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155. *See supra* Part I.A. (discussing role of agency).

156. *See, e.g.*, BULLARD & WRIGHT, *supra* note 91, at 279–311 (recommending that social factors be considered in a variety of disaster policies including those dealing with evacuation, health care, and financial risk); Cutter & Finch, *supra* note 129, at 110–12 (arguing for changes in "policies, procedures, and disaster protocols" based on a spatial understanding of social vulnerability).

157. MARY WOLLSTONECRAFT, A VINDICATION OF THE RIGHTS OF WOMEN 71 (Carol H. Poston ed., 1975) (1792).

According to Shklar, inequality is the "fountain and origin" of injustice.[158] For Susan Cutter, inequality is also the fountain and origin of social vulnerability,[159] a central element of community hazard. But under U.S. law, not all inequality is necessarily unjust; sometimes it is just a misfortune. The argument for seeing social vulnerability as misfortune is pretty straightforward. Government, this thinking goes, owes similar expenditures to protect communities with similar geophysical vulnerabilities. But it owes no "special" duty for communities or individuals with extraordinary needs. It certainly owes no special obligation to correct social inequality simply for the sake of hazard mitigation. This argument is supported by a practical argument and a theoretical argument. The practical argument is that government works best by sector. Federal Emergency Management Agency (FEMA), the agency devoted to natural hazard mitigation, is not equipped to offer special services for special social vulnerabilities. To do more would require more integration, more bureaucracy, and more federal involvement. Hazard mitigation is best managed from the local level. Federal officials are there to lend a hand, but not to re-engineer the dynamics of local communities.

The philosophical argument begins with the premise that in a democracy, the government's job (among other things) is to enhance freedom. An important part of freedom requires that the government treat individuals in equal ways; but it does not require that the government ensure equal outcomes. So long as government does not intentionally discriminate against a person on the basis of a suspect or irrational classification, no injustice has been committed.[160] Acts of commission, in this sense, may be unlawful. But acts of omission seldom are.[161]

The response to the argument goes like this: A multifaceted social problem like disaster risk demands a multifaceted game plan. Sometimes attacking an issue on a single wavelength makes sense. But it is often inefficient and inadequate. Take automobile accidents, for example. Technological innovations like airbags and anti-lock

158. SHKLAR, *supra* note 9, at 87.

159. *See* Cutter & Finch, *supra* note 129, at 2305 ("Social vulnerability is born from inequality and its social and political consequences.").

160. *See, e.g.*, Washington v. Davis, 426 U.S. 229 (1976) (holding that the disproportionate impact of a facially neutral written employment test on African-Americans did not warrant a conclusion that the test was purposely discriminatory).

161. *See, e.g.*, DeShaney v. Winnebago Cnty., 489 U.S. 189 (1989) (holding that states have no constitutional duty to protect children from their parents after receiving reports of possible abuse).

brakes have helped bring traffic fatalities to an all-time low.[162] But we have also worked on the social aspects of driving by tightening standards for teenagers, requiring infant car seats, and prosecuting more drunk drivers. To ignore drivers' behavior would put more lives at risk and waste more time and money. This argument, based on utilitarianism (or "welfare economics"), forms the practical response.

The theoretical response takes more unpacking. As contemporary thinkers have noted, Western philosophy has perused for centuries the face of justice in its ideal form.[163] But it has devoted relatively little energy to identifying its opposite, injustice.[164] Instead, we know injustice when we feel it. Injustice, writes Shklar, is "the special kind of anger we feel when we are denied promised benefits and when we do not get what we believe to be our due."[165] Though rooted in emotion, injustice remains "eminently political."[166] Thus in democratic theory, "the sense of injustice is taken to be an intrinsic part of our moral structure and an appropriate reaction to unwarranted social deprivation."[167]

Again, Rousseau must take credit for this insight. The petulant savant, known for his own thin skin, believed injustice was (as Shklar summarizes) "a universal human disposition, an iradicable social emotion and a politically significant phenomenon."[168] We instinctively reject injustice for ourselves, Rousseau argued. Through proper training, we grow to disdain its application to others as well.[169] Injustice often takes an active form, but inaction, as Justice William Brennan once wrote, "can be every bit as abusive of power."[170] Echoing the voices of disaster victims everywhere, Shklar writes, "It is not the origin of the injury, but the possibility of preventing and reducing costs, that allows us to judge whether there was or was not unjustified passivity in the face of disaster."[171] Still, not every slight is

162. Keith Barry, *Safety in Numbers: Charting Traffic Safety and Fatality Data*, CAR & DRIVER (Apr. 2011), http://www.caranddriver.com/features/safety-in-numbers-charting-traffic-safety-and-fatality-data.

163. AMARTYA SEN, THE IDEA OF JUSTICE 5–8 (2009).

164. *Id.*; SHKLAR, *supra* note 9, at 84.

165. SHKLAR, *supra* note 9, at 83.

166. *Id.* at 83.

167. *Id.* at 84.

168. *Id.* at 86.

169. *Id.* at 88.

170. DeShaney v. Winnebago Cnty., 489 U.S. 189, 212 (1989) (Brennan, J., dissenting).

171. SHKLAR, *supra* note 9, at 81.

an injustice: we need a way to distinguish between "socially validated expectations, mere fantasies, and unwarranted hopes."[172]

Of course, what counts as injustice changes over time. When, in 1873, Myra Bradwell was denied the right to become an Illinois lawyer because she was a woman, the result, said the U.S. Supreme Court, was not an unjust indictment of her abilities, but rather her misfortune of having being been born female—a class of persons not legally capable of signing enforceable contracts.[173]

To distinguish between a "validated expectation" and a fantasized "hope," we need a perspective. Because the sense of injustice emerges from within the claimant naturally (according to Rousseau),[174] it seems essential to begin any inquiry from the point of view of the claimant. The perspective is not dispositive. But, according to Shklar, "[g]iven the inevitability of the inequality of all kinds of power among us, [looking from the bottom up] is the necessary democratic response."[175] History, after all, has a tendency to blame the victim. Recall that Rousseau attributed Lisbon's slow evacuation to pocket-stuffing clerks fleeing their homes.[176] But aren't you *supposed* to have cash and identification papers when you evacuate? When millions perished in Bengal's 1943 famine, Winston Churchill scandalously blamed Indians for "breeding like rabbits," instead of admitting his government's incompetence.[177] Since independence, a democratic India has yet to see another famine.[178] And when, in 2005, federally maintained levees burst and drowned the Crescent City, beset victims were forced to swallow a torrent of blame from moralizing Congressmen and agency officials.[179]

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172. *Id.* at 89.

173. *See* Bradwell v. Illinois, 83 U.S. 130, 142 (1873) (holding that the Privileges and Immunities Clause of the Fourteenth Amendment does not include the right to practice a profession); NANCY LEVIT & ROBERT R.M. VERCHICK, FEMINIST LEGAL THEORY: A PRIMER 4–5 (2006) (describing reasoning in the opinion); *see also* SHKLAR, *supra* note 9, at 2 (arguing that in earlier times the harms of racial discrimination were seen not as an injustice against a person of color, but as a misfortune of not having been born white).

174. SHKLAR, *supra* note 9, at 87.

175. *Id.* at 90.

176. *See* Dynes, *supra* note 18, at 106.

177. MADHUSREE MUKERJEE, CHURCHILL'S SECRET WAR 205 (2010) (quoting Winston Churchill on the Bengal famine).

178. AMARTYA SEN, DEVELOPMENT AS FREEDOM 178 (1999).

179. *FEMA Chief: Victims Bear Some Responsibility*, CNN.COM (Sept. 1, 2005), http://articles.cnn.com/2005-09-01/weather/katrina.fema.brown_1_mandatory-evacuation-death-toll-relief-effort?_s=PM:WEATHER ("The director of the Federal Emergency Management Agency said Thursday those New Orleans residents who chose not to heed warnings to evacuate before Hurricane Katrina bear some responsibility for their fates."); *Arizona Talk Radio Brings*

B. The Capability Approach

Amartya Sen, the economist and Nobel laureate, is famous for his work on social inequality. His research has added greatly to the field of development economics and helped transform the way the United Nations Development Programme now measures levels of poverty and inequality around the world. The crux of his analysis centers on human "capability," a concept he first introduced at Stanford University's Tanner Lecture on Human Values in 1979.[180] Put simply, capability is a measure of what people can actually do and what they can actually become.

Following the liberal tradition, Sen embraces personal freedom as society's "basic building block[]."[181] A society's first goal, therefore, is to promote the enjoyment of personal freedom. But freedom without the resources to make real choices and to experience real consequences is an empty shell. True freedom, Sen argues, demands that all persons have the real-life capabilities to "lead the kind of lives they value—and have reason to value."[182] The capabilities approach has influenced research in several fields, from economics, to political science, to history.[183] The approach has also inspired legal scholarship in such areas as property, health policy, corporate social responsibility, and environmental justice.[184]

You Some Kindly Compassion, AZCENTRAL.COM (Sept. 4, 2005), http://www.azcentral.com/arizonarepublic/local/articles/0904polinsider04.html (quoting U.S. Senator Jon Kyl talking about the damages caused by Hurricane Katrina: "Because the question is if people know year after year after year a natural disaster occurs in a particular place and people continue to build there and want to live there, should they bear the responsibility of buying insurance or should everyone else bear the responsibility?").

180. Amartya Sen, Drummond Professor of Political Economy at Oxford University, The Tanner Lecture on Human Values at Stanford University: Equality of What? (May 22, 1979) (transcript available at http://www.uv.es/~mperezs/intpoleco/Lecturcomp/Distribucion%20Crecimiento/Sen%20Equaliy%20of%20what.pdf).

181. SEN, DEVELOPMENT AS FREEDOM, *supra* note 178, at 18.

182. *Id.*

183. *See, e.g.*, 2 ARGUMENTS FOR A BETTER WORLD: ESSAYS IN HONOR OF AMARYTA SEN (Kaushik Basu & Ravi Kanbur eds., 2009) (presenting essays in these disciplines and others).

184. *See, e.g.*, Margaret Chon, *Intellectual Property and the Development Divide*, 27 CARDOZO L. REV. 2821, 2874–78 (2006) (property); James J. Kelly, Jr., *Land Trusts that Conserve Communities*, 59 DEPAUL L. REV. 69, 72, 91–96 (2009) (property); Jedediah Purdy, *A Freedom-Promoting Approach to Property: A Renewed Tradition for New Debates*, 72 U. CHI. L. REV. 1237, 1258–63 (2005) (property); JENNIFER PRAH RUGER, HEALTH AND SOCIAL JUSTICE 45–130 (2010) (health policy); Jennifer Prah Ruger, *Health, Capability, and Justice: Toward a New Paradigm of Health Ethics, Policy and Law*, 15 CORNELL J.L. & PUB. POL'Y 403, 435–40 (2006) (health policy); Cynthia A. Williams, *Corporate Social Responsibility in an Era of Economic Globalization*, 35 U.C. DAVIS L. REV. 705, 710 (2002) (corporate social

Politicians and philosophers will disagree on the margins about what a person's bundle of capabilities must include.[185] But at the very least all persons are entitled to such "elementary capabilities" as "being able to avoid such deprivations as starvation, undernourishment, escapable morbidity and premature mortality, as well as . . . being literate and numerate, enjoying political participation and uncensored speech and so on."[186] The inclusion of democratic processes is vital—political participation is both an *intrinsic value* (it is a constituent of freedom) and a *constructive means* by which individuals can secure other aspects of freedom and set group norms for defining them.[187]

Capabilities like these cannot be defined solely by affluence. This is because a person's ability to lead a life of value depends not only on a level of income, but also on personal characteristics (disability, age, gender), environmental diversities (climatic circumstances, temperature ranges, rainfall, flooding, and such), variations in social climate (education, social networks, crime), and more.[188] As anyone from the projects can tell you, it is expensive to be poor.[189] Like utilitarianism, the capability approach is concerned with the outcome—with ensuring that all persons have the capability to lead lives they value and have reason to value. But in contrast to utilitarianism, this outcome is only worthy to the capability approach if it is a product of meaningful public participation. Like libertarianism, the capability approach is committed to equality. But unlike libertarianism, the equality sought is not equality of *treatment* or baseline *opportunity*, but the equality of *capability*—the real-world

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responsibility); Shannon M. Roesler, *Addressing Environmental Injustices: A Capability Approach to Rulemaking*, 114 W. VA. L. REV. 49 (2011) (environmental justice).

185. Sen allows for this and in the past has taken heat for such obscurity. *See* SEN, THE IDEA OF JUSTICE, *supra* note 163, at 232–33 (noting that the capability approach can be applied in different ways depending on the policies being addressed and the data and other information available). For arguments that the capability approach suffers from vagueness, see Ingrid Robeyns, *The Capability Approach in Practice*, 14 J. POL. PHIL. 351, 353 (2006) (describing Sen's capability approach as "radically underspecified") and Thomas Pogge, *Can the Capability Approach Be Justified?*, 30 PHIL. TOPICS 167, 168 (2002) (arguing that Sen's approach does not specify a criteria for assessing levels of relative injustice between institutions).

186. SEN, DEVELOPMENT AS FREEDOM, *supra* note 178, at 36.

187. *Id.* at 37.

188. *Id.* at 70.

189. *See, e.g.*, DeNeen L. Brown, *The High Cost of Poverty*, WASH. POST, May 18, 2009, at C01, *available at* http://www.washingtonpost.com/wp-dyn/content/article/2009/05/17/AR2009051702053.html ("The poorer you are, the more things cost. More in money, time, hassle, exhaustion, menace.").

means to lead a life that you have reason to value, free of extreme deprivations. Whether you choose that, or not, is up to you.[190]

C. Human Capability and Disaster

We see the capability approach in some aspects of American law and cultural norms. When the Americans with Disabilities Act requires a new building to be accessible to wheelchairs,[191] the injunction reflects the belief that everyone, regardless of disability, is entitled to participate in community life free from unreasonable physical limitation. When the Clean Air Act requires regulators to set ambient air standards to protect "sensitive populations" like children or asthma sufferers,[192] the glister of capability is on show. It is not enough that everyone gets to breathe the *same* air or even air healthful enough for *most people* (understanding that even this goal eludes us). But the air is required to be healthful enough to permit even those with special vulnerabilities to live a life that offers them experiences and choices they have reason to value.

In the wake of the 2010 Deepwater Horizon blowout, a controversy involving Vietnamese-American fishers and BP's compensation facility swung a spotlight on the issue of human capability against the backdrop of disaster. Louisiana is home to roughly 25,000 Vietnamese-Americans, most of them living near the Gulf Coast.[193] Their communities, which grew out of the wave of refugees in the 1970s, are almost all economically dependent on fishing and crabbing.[194] Indeed, it is estimated that thirty to fifty percent of all commercial fishers in the Gulf are of Vietnamese descent.[195] In addition to supporting the local economy, fishing also nourished an array of reciprocal bonds among family, friends, and

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190. For a more detailed analysis of the capability approach in relation to utilitarianism and libertarianism, see SEN, DEVELOPMENT AS FREEDOM, *supra* note 178, at 74–86.

191. 42 U.S.C. § 12183 (2012).

192. Am. Lung Ass'n v. EPA, 134 F.3d 388, 389 (D.C. Cir. 1998) ("NAAQS must protect not only average healthy individuals, but also 'sensitive citizens'-children, for example, or people with asthma, emphysema, or other conditions rendering them particularly vulnerable to air pollution.").

193. UNITED LA. VIETNAMESE AM. FISHERFOLKS & MQVN CMTY. DEV. CORP., LOSS OF SUBSISTENCE USE CLAIM FRAMEWORK & TEMPLATE 5, Dec. 2010 (policy paper submitted to Kenneth R. Feinberg, administrator of the Gulf Coast Claims Facility) (on file with DUKE ENVTL. L. & POL'Y F.).

194. *Id.* (noting that eighty percent of all Vietnamese-Americans in the region are connected to the seafood industry).

195. *Id.*

business associates.[196] Vietnamese-American fishers fed their families with their catch. They bartered it for fruits, vegetables, and other goods.[197] A fisher might donate a recent haul to a spring festival or "pound" (that is, reward) the minister with tuna after a stirring sermon. At a wedding, the bride's family might be showered with a hundred pounds of blue crab.[198]

The Deepwater Horizon oil spill devastated the fisheries that year and shattered those social bonds. Thousands of Vietnamese-American subsistence fishers submitted claims to BP's original compensation fund.[199] But the claimants and the fund's administrator, Kenneth Feinberg, could never agree on how the loss should be valued. Submitting documentation on their heritage and cultural history, many Vietnamese-Americans argued that their losses far exceeded the market value of self-caught seafood.[200] Although they did not describe it this way, the claimants were talking about "capability." To them a sack of crab was worth more than the personal nourishment or satisfaction that it brought (both of which are presumably reflected in the market price). The seafood also strengthened social institutions—institutions that reached out to families in times of crisis, that watched over the elderly and the infirm, and that increased the capability (and thus the freedom) of the community's most vulnerable members. However, when claimants argued for compensation valued according to cultural significance, their requests fell on deaf ears.[201]

The capability approach may yet claim victory. When, in the spring of 2012, BP and a class of private plaintiffs negotiated a settlement agreement, they carved out special terms for claims by

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196. *Id.* at 6.

197. Jarvis DeBarry, Opinion, *Vietnamese Fishers Struggle To Document for Feinberg Gifts They Gave from the Heart*, NEW ORLEANS TIMES-PICAYUNE, Dec. 21, 2010, http://www.nola.com/opinions/index.ssf/2010/12/vietnamese_fishers_struggle_to.html.

198. *Id.*

199. BP's fund, officially named the Gulf Coast Claims Facility and administered by Kenneth Feinberg, has now been replaced by a court-administered settlement fund, created after an announced settlement between BP and a class of private plaintiffs, including many members of the Gulf's Vietnamese-American community. John Schwartz, *Accord Reached Settling Lawsuit over BP Oil Spill*, N.Y. TIMES, Mar. 3, 2012, at A1, *available at* http://www.nytimes.com/2012/03/03/us/accord-reached-settling-lawsuit-over-bp-oil-spill.html.

200. *See* Douglas Kysar, *There Are Ways to Put a Value on that Bartered Shrimp*, NEW ORLEANS TIMES-PICAYUNE, Dec. 23, 2010, http://www.nola.com/opinions/index.ssf/2010/12/there_are_ways_to_put_a_value.html (noting resistance by the Gulf Coast Claims Facility to recognize subsistence loss claims based on cultural value).

201. *Id.*

subsistence fishers. Under those terms, subsistence fishers would be eligible for 2.25 times the market-based loss, in acknowledgment of "damage to subsistence family and community customs and culture."[202] In Sen's terms, this added compensation can be understood as an effort to help revive the community's weakened social structures with economic stimulus. The "culture premium" could, if claimants so choose, be directly funneled back into the churches, preschools, nursing homes, and other community assets that together help residents live lives they have reason to value.

Sen's interests in development and human capability often lead him to the topic of natural disasters. In this subject, he is perhaps best known for his work on famines—events that can be triggered by droughts, storms, floods, and other phenomena.[203] Disasters, after all, are one of the great threats to economic resilience in the developing world.[204] And reducing a community's risk (whether in a poor country or a rich one) strengthens a range of personal freedoms, most notably the freedoms from avoidable impoverishment, injury, and death. In his inquiries into famines and other "calamitous crises,"[205] Sen's campaign against injustice—at root, a humanistic journey in ethics—ultimately leads him to some of the same insights we have seen promoted by geographers and other experts in the social sciences. Two are particularly important.

First, like Susan Cutter and her colleagues, Sen emphasizes the connection between natural hazard and geographic, social, and economic circumstances.[206] As an example, he offers data showing that during some of the worst famines in modern history, it was people's inability to *purchase or acquire* food, rather than the *physical*

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202. *Deepwater Horizon* Economic and Property Damages Settlement Agreement as Amended on May 2, 2012 Ex. 9 at 2, In re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010, MDL No. 2179 (E.D. La. 2012).

203. *See, e.g.*, SEN, DEVELOPMENT AS FREEDOM, *supra* note 178, at 163 (discussing the profound impact that exchange conditions can have on famine); SEN, IDEA OF JUSTICE, *supra* note 163, at 338–45 (explaining that famine generally does not occur in democracies).

204. *See* FARBER ET AL., *supra* note 5, at 393 (noting that "Small Island Developing States and Land-Locked Developing Countries" experience "a particularly low resilience to loss, meaning that disaster losses can lead to major setbacks in economic development").

205. SEN, DEVELOPMENT AS FREEDOM, *supra* note 178, at 188.

206. *Id.* at 162–63. Sen focuses on the kinds of extreme events that lead to hunger and starvation, but repeatedly notes that his analysis applies to "famine and other crises" as well. *See id.* at 160–88.

availability of food that cost so many lives.[207] The drought or flood that precipitates a poor harvest also throws people out of work and drives down monthly income. Thus, "famines and other crises thrive on the basis of severe and sometimes suddenly increased inequality."[208] For this reason, Sen is skeptical of famine prevention policies that rely only on expanding food production, stating that it "is like putting all the eggs in the same basket."[209] Instead, he favors a more comprehensive strategy that uses public investment to create emergency employment and that polices markets to make sure that food and labor are exchanged efficiently and fairly.[210]

Second, Sen stresses the importance of a community's infrastructure—in its social, built, and natural forms. This focus on the community may surprise some readers, who are more used to Sen's regard for the individual. But the capability approach recognizes the value that individuals place on collaborating with others and taking part in common traditions and experiences.[211] Sen is specifically aware of the importance of social networks and public health systems, not only for tempering community resilience, but also for strengthening individual capability.[212] Sen also acknowledges the role that physical geography and ecosystem services play in shaping the capacity to enjoy personal freedoms.[213] Geography is not destiny, but its thumb is on the scale.

Sen offers a third insight, which is sometimes mentioned in the social science literature, but to which he gives full voice in his moral deliberations: the paramount necessity of democratic values. For Sen, the project of disaster-risk reduction is deeply linked to government transparency, political accountability, and the right to participate in

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207. *See id.* at 165 (discussing the Bangladesh famine of 1974, where although there was more food availability per capita, "starvation was initiated by regional unemployment caused by floods," which lead to "*immediate* income deprivation of rural laborers").

208. *Id.* at 187.

209. *Id.* at 177.

210. *See id.* at 177–78 (noting that there are no famines in functioning democracies, which implies that equality in the marketplace aids in famine prevention).

211. SEN, THE IDEA OF JUSTICE, *supra* note 163, at 246; *see also* Roesler, *supra* note 184, at 76–77 (confirming that Sen recognizes the importance of collaboration in the capability approach).

212. *See* SEN, DEVELOPMENT AS FREEDOM, *supra* note 178, at 19–20 (explaining that "income deprivations and capability deprivations have considerable correlational linkages," and that better health helps individuals in their earning higher incomes).

213. *See id.* at 70 (arguing that well-being and freedom are partially dependent on "environmental diversities," such as "temperature ranges, rainfall, flooding and so on").

administrative decisionmaking.[214] Democracy, as noted earlier, is an inherent aspect of freedom. But it is also an important hedge against deprivation. Indeed, public approval or disapproval is an important measure of what justice demands. For without "consent," to quote Shklar, "we have no reason to suppose that [people's] legitimate expectations are being met."[215]

Consider famines. "[N]o substantial famine," asserts Sen, "has ever occurred in a democratic country—no matter how poor."[216] He is right.[217] Even young democracies in Botswana, Zimbabwe, and post-colonial India have averted famine in the face of devastating harvests, while famines in Sudan and North Korea (to name just two examples) have unfurled repeatedly beneath the eyes of passive tyrants.[218] As Sen explains: "Authoritarian rulers, who are themselves rarely affected by famines . . . tend to lack the incentive to take timely preventative measures. Democratic governments, in contrast, have to win elections and face public criticism, and have strong incentives to undertake measures to avert famines and other such catastrophes."[219] Indeed, Sen has argued that "a free press and an active political opposition constitute the best early-warning system a country threatened by famines can have."[220]

The necessity of democratic process is surely most dramatic in poor countries, but that fact should not distract us from the importance of accountability and public participation when disaster strikes a rich nation. Let us look at the example of government compensation funds, an important aspect of the "recovery" stage in the Circle of Risk Management.

D. An Example: Compensation Funds

Government compensation funds are an important way of putting money into victims' hands after a disaster so that they can begin the work of rebuilding their households and—just as important—repairing the social and economic infrastructure of the

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214. *See id.* at 180–86.

215. SHKLAR, *supra* note 9, at 90–91.

216. SEN, DEVELOPMENT AS FREEDOM, *supra* note 178, at 51.

217. *See generally* JAN-ERIK LANE & SVANTE ERSSON, DEMOCRACY: A COMPARATIVE APPROACH 58 (2003).

218. SEN, DEVELOPMENT AS FREEDOM, *supra* note 178, at 16.

219. *Id.*

220. *Id.* at 181.

community.[221] Government funds typically compensate individuals who have suffered certain injuries resulting from a natural or technological disaster, or, more recently, an act of terrorism. The money is appropriated by Congress and distributed through a no-fault administrative process.[222] "As traditionally designed, compensation funds make no explicit distinction between vulnerable and nonvulnerable populations."[223] But because vulnerable populations are often more likely to be exposed to hazards, their susceptibility to harm is likely to be higher, and recovery is generally more difficult, compensation funds are especially relevant to those hoping to build resilience in a disadvantaged community.[224]

Perhaps the best-known compensation fund in recent times is the September 11th Victims Compensation Fund. The fund, created ten days after the attack, compensated persons (many represented by their estates) who were present at the World Trade Center site and suffered physical injury or death.[225] In exchange for an award, claimants agreed to waive their right to sue the airlines, the airline manufacturers, the city of New York, or other potential defendants.[226] Nearly all eligible claimants took part, and the fund paid out $7 billion, with the average payment totaling $1.8 million per claimant.

Two lesser-known compensation funds involve the Teton Dam breach in Idaho in 1976 and the Cerro Grande Fire in New Mexico in 2000. In the first case, a federally constructed dam crumbled in eastern Idaho, unleashing waters that destroyed five downstream towns.[227] Investigations blamed a flawed design and shoddy construction.[228] Within a week, President Gerald Ford called on Congress to establish a multimillion-dollar compensation fund,[229] and "[t]hrough a hastily assembled administrative claims process, 7500 claims were settled for a total of $322 million."[230] The Cerro Grande

221. I previously examined the compensation funds discussed here in VERCHICK, *supra* note 3, at 178–82.

222. *Id.* at 178.

223. *Id.*

224. *Id.*

225. *Id.*

226. *Id.*

227. *Id.* at 179.

228. *Id.*

229. *Id.* ("Gerald Ford requested a $200 million appropriation to start a victim's compensation fund.").

230. *Id.*; *see* DYLAN J. MCDONALD, THE TETON DAM DISASTER (2006); Pierce O'Donnell, *Leave No Katrina Victims Behind*, HUFFINGTON POST (Aug. 29, 2008, 12:11 PM),

Fire occurred when a "controlled burn" conducted by the National Park Service in Bandelier National Monument burst out of control, destroying 43,000 acres and 400 homes.[231] Two months later, Congress passed a multimillion-dollar compensation program intended "to compensate as fully as possible those parties who suffered injuries and damages from the Cerro Grande Fire."[232]

We can think of these funds as expressions of government accountability, instigated by public demand. Each of these events shocked the public conscience. The harm was so devastating and the victims so sympathetic; it seemed to many that government simply had to step in, which it did with uncharacteristic speed. Further, the likelihood of lawsuits against government actors or other entities suggests not only a desire to avoid protracted litigation, but also a kind of silent acknowledgement that perhaps government could have or should have done more to reduce the risk.[233]

Along with others, I have sometimes wondered why a compensation fund was never established—or even considered—for New Orleans residents after Hurricane Katrina.[234] In many ways, the case for a Katrina fund is compelling. Like the 9/11 attack, the New Orleans flood was jarring in both its scope and suddenness. Images from CNN and other broadcasters were seared into the public consciousness, making the destruction of this American city part of everyone's history. Like the Teton Dam breach, the unchallenged evidence is that the New Orleans flood was caused by defects in design and construction of barriers that were at all times under the control of a federal agency.[235] And these mistakes brought destruction

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www.huffingtonpost.com/pierce-odonnell/leave-no-katrina-victims_b_122396.html; *The Teton Dam Failure Site*, CTR. FOR LAND USE INTERPRETATION, http://www.clui.org/ludb/site/teton-dam-failure-site (last visited Sept. 23, 2012).

231. VERCHICK, *supra* note 3, at 179.

232. Disaster Assistance: Cerro Grande Fire Assistance, 65 Fed. Reg. 52,260, 52,260 (Aug. 28, 2000) (to be codified at 44 C.F.R. pt. 295).

233. The case of 9/11 is complicated, but the disasters in Idaho and New Mexico clearly suggest this motive.

234. *See* VERCHICK, *supra* note 3, at 179–82 (offering potential explanations for why Congress refused "to seriously consider a compensation fund for the victims of Katrina"); Farber, *Disaster Law and Inequality*, *supra* note 5, at 317–19.

235. *See* Mark Schleifstein, *Corps Operation of MR-GO Doomed Homes in St. Bernard, Lower 9th Ward, Judge Rules*, NEW ORLEANS TIMES-PICAYUNE (Nov. 19, 2009, 8:30 AM), http://www.nola.com/hurricane/index.ssf/2009/11/post_16.html (In a groundbreaking decision, a federal judge ruled that the Army Corps of Engineers' mismanagement of maintenance at the Mississippi River Gulf Outlet was directly responsible for flood damage in St. Bernard Parish and the Lower 9th Ward after Hurricane Katrina.); *In re* Katrina Canal Breaches Consolidated Litigation, 647 F. Supp. 2d 644 (E.D. La. 2009).

upon a city with one of the highest concentrations of social vulnerability in the country.

New Orleans was left out as a result of participation and accountability issues. From the beginning, the Katrina flood victims were limited in their ability to organize and exert political pressure on policymakers because of their social vulnerability, geographic dispersion, and, in the early days, lack of organized government. The families of 9/11 victims, in contrast, were, by and large, better educated, wealthier, and still living in intact households.[236] In addition, Katrina victims did not appear to have a reasonable chance of recovering damages from the federal government because of the sweeping government immunity recognized for flood control projects.[237] In contrast, as Daniel Farber notes, the families of 9/11 victims "had a reasonable prospect of collecting massive tort damages against the airline industry, giving them political leverage."[238]

On top of all this, the American public seems to have been ambivalent about New Orleans's victims almost from the very beginning. Many wondered why more people did not voluntarily evacuate (perhaps not understanding that poor neighborhoods have fewer cars), or why so many turned violent (they did not).[239] A study of cognitive bias conducted after the storm by Stanford communications expert Shanto Iyengar even suggested that victims' skin color may have had an unconscious effect on how generous members of the public thought the government should be.[240] Without an organized community, legal leverage, or broad public support, the democratic process could not deliver the kind of accountability that it had in the past. Because democratic systems like ours are, in practice, more responsive to organization and money, securing a seat at the

236. *See* Farber, *Disaster Law and Inequality*, *supra* note 5, at 318 (noting differences in education, wealth, and "political clout").

237. The Fifth Circuit Court of Appeals has recently suggested that the immunity is not as complete as some had supposed. *See In re* Katrina Canal Breaches Consolidated Litigation, 647 F. Supp. 2d at 703 (discussing the discretionary function exemption to the Government's waiver of sovereign immunity for personal injury claims under the FTCA).

238. Farber, *Disaster Law and Inequality*, *supra* note 5, at 319.

239. *See* Nicole M. Stephens, MarYam G. Hamedani, Hazel Rose Markus, Hilary B. Pergsieker & Liyam Eloul, *Why Did They "Choose" to Stay?*, 20 PSYCHOL. SCI. 878, 878 (2009) (examining the perspectives of hurricane survivors and observers regarding evacuation); Lisa Grow Sun, *Disaster Mythology and the Law*, 96 CORNELL L. REV. 1131, 1134 (2011) (noting that media reports of lawlessness and violence were greatly exaggerated and that major news outlets eventually retracted many of these reports).

240. VERCHICK, *supra* note 3, at 161. For a discussion of this and similar studies, see *id.* at 160–64.

table and pursuing government accountability will usually be harder for the marginalized people who need it most.

E. Resilience as Freedom

Inequality, when it becomes a fountain of social vulnerability, is an injustice. We know this by looking (as Shklar suggests) at the lives of those on the society's bottom rungs and imagining (as Sen instructs) the bundle of capabilities that any person would need to exercise freedom in the context of a disaster. At a minimum, we should agree that human freedom requires the capacity to avoid unnecessary property damage, injury, and death. In the face of disaster, human freedom requires *resilience.*

The building blocks of resilience can take many forms. In the case of Latino populations escaping a California earthquake, resilience will demand robust communications systems in the Spanish language, assurances that evacuees accepting assistance will not be interrogated by immigration officials, and assurances that responders will be trained to understand their cultural perspectives and needs. Low-income communities have reason to expect housing and assistance programs that give them the same shot at finding a rental or rebuilding their home that other groups are offered. When subsistence fishers lose access to seafood, they have reason to expect compensation programs that value their losses in the terms in which they actually experience them. When government protection fails in a way that shocks the conscience, the possibility of special government compensation should not depend on how popular, well-connected, or lawyered-up the injured community is.

Putting these words into practice is the hard part. While progress involves a million little fixes, we need some big-picture initiatives to forge a national commitment and provide tools for tackling the problem. The next Part takes up that challenge.

III. FIGHTING INJUSTICE WHILE FACING DISASTER

A. General Principles

What happens when we join disaster's social turn with a vision of injustice based on capability? The social turn teaches that government's role is broader than it first appears. Building resilience, a job the government already accepts, is more than an exercise in steel and concrete. As the social science literature shows, reducing community risk entails not just good engineering, but also relieving

the burdens of social vulnerability. The capability approach teaches that the job of building resilience—and thus the job of reducing social vulnerability—is more than a politician's kind turn, more than charity; it is the obligation of a free society. To fail to provide it is an injustice.

The commitment to social resilience means more than refusing to *intentionally* discriminate against a disfavored group, or promising not to make social inequality any *worse* than it is today. It requires identifying the places where social vulnerability exists and *improving* the real-life capabilities of all the people living there. Always, we should remember, as Douglas Kysar has said, that human beings are more than "resources to be managed."[241] Residents must be involved in the decisions affecting their communities, both as a means of preserving their integrity and protecting their interests.

Pursuing disaster justice along these terms requires mainstreaming and collaboration. By "mainstreaming," I mean incorporating the consideration of social vulnerability into every major decision that an official or agency makes in the course of planning for, responding to, compensating for, or recovering from a disaster. In the Circle of Risk Management, boosting social resilience must be "business as usual." We must move beyond so-called "hazard-by-hazard" planning to a more comprehensive strategy that incorporates cumulative and synergistic exposures and vulnerabilities. By "collaboration," I mean that agencies across sectors (emergency response, environment, public health, and so forth) and governments at all levels (local, state, tribal, federal) must forge alliances to engage public participation, share information and technology, develop policy initiatives, achieve desired outcomes, and make themselves accountable.

Much of this work will require new government initiatives, two of which I will discuss below. But lawyers and policymakers should keep in mind that some existing laws may already provide the "foothold" needed to propel the next leap forward.[242] For instance, the Stafford Act,[243] which dictates how federal resources can be used in responding to major disasters, contains new "post-Katrina" provisions requiring "equitable" treatment on the basis of race, color,

241. DOUGLAS A. KYSAR, REGULATING FROM NOWHERE: ENVIRONMENTAL LAW AND THE SEARCH FOR OBJECTIVITY 250 (2010).

242. *See* Verchick & Hall, *supra* note 17, at 2223–30 (describing how provisions of existing law can be used to further new policy objectives).

243. 42 U.S.C. §§ 5121–5208 (2012).

religion, nationality, sex, age, disability, English proficiency, and economic status.[244] It also requires state and local governments to develop evacuation plans that take vulnerable populations into account, though implementation on that front has been uneven.[245] Agency planning efforts to adapt to climate change might also open a window for building social resilience, as White House principles for such efforts put priority on addressing the needs of vulnerable populations and engaging public participation.[246]

But the best way to move forward would be for the federal government to formally commit to improving social resilience and to begin building the tools to make it happen. The first approach might take the form of a federal executive order. The second requires a nationally consistent disaster-justice mapping tool. The two would work best in tandem. But either could be initiated without the other for the sake of getting started.

B. An Executive Order on Disaster Justice

Elsewhere, I have proposed a federal "Executive Order on Disaster Justice" as a way of mainstreaming social resilience into disaster policy and encouraging horizontal and vertical collaboration.[247] Patterned after the Executive Order on Environmental Justice,[248] this new order would require federal agencies to consider disaster justice in all policies and activities related to all points on the Circle of Risk Management. Agencies would be required to identify, address, and protect against conditions that result in disproportionate or serious adverse effects on vulnerable populations, including minorities, women, children, the

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244. 42 U.S.C. § 5151 (2008); *see also* Farber, *Disaster Law and Inequality*, *supra* note 5, at 310–11 (discussing anti-discrimination features of the Stafford Act); VERCHICK, *supra* note 3, at 172–73.

245. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-07-44, TRANSPORTATION-DISADVANTAGED POPULATIONS: ACTIONS NEEDED TO CLARIFY RESPONSIBILITIES AND INCREASE PREPAREDNESS FOR EVACUATIONS 5 (2006); *see also* VERCHICK *supra* note 3, at 172 (recommending private right of action to force implementation).

246. WHITE HOUSE COUNCIL ON ENVTL. QUALITY, PROGRESS REPORT OF THE INTERAGENCY CLIMATE ADAPTATION TASK FORCE: RECOMMENDED ACTIONS IN SUPPORT OF A NATIONAL CLIMATE CHANGE ADAPTATION STRATEGY 10 (2010), *available at* http://www.whitehouse.gov/sites/default/files/microsites/ceq/Interagency-Climate-Change-Adaptation-Progress-Report.pdf.

247. VERCHICK, *supra* note 3, at 177.

248. Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, 59 Fed. Reg. 7629 (Feb. 11, 1994).

elderly, the disabled, non-English speakers, undocumented persons, and the poor.

An executive order on disaster justice would also require FEMA to create an advisory committee charged with developing uniform standards and methodologies for agencies to use in carrying out the order's mandate. It could require all agencies to consider the consequences their actions might have on ease of evacuation, the vulnerability of important facilities, and the stability of natural barriers like wetlands or forests. The advisory committee would include some representation from vulnerable communities and would seek out viewpoints from such communities through hearings or other outreach efforts. The methodologies adopted would also emphasize the role of community participation in implementing the order's goals. Ideally, such an order would include annual agency reporting requirements, perhaps reviewed by the White House Office of Management and Budget to make sure it gets done.

C. A Disaster Justice Mapping Tool

A comprehensive approach to disaster justice requires a nationally consistent mapping tool that combines local aspects of geophysical vulnerability with local aspects of social vulnerability. General knowledge of the physical and social characteristics of disaster risk is not enough.[249] We need to know where socially vulnerable populations are located, how close they are to fault lines and flood threats, and what resources (public and private) might be available to build more resilience.

This mapping tool, perhaps maintained at FEMA, would reside on a common agency platform, but draw from information already available from the U.S. Census Bureau, the National Oceanic and Atmospheric Administration, the U.S. Environmental Protection Agency (EPA), the USGS, and other agencies. It would also integrate information collected locally. Crucially, the design of the tool would be open to public participation, allowing for local communities to contribute their ideas and concerns about what data and what community characteristics should be included. The tool would be flexible, allowing a user to "overlay" maps of various kinds to home in on a particular concern. You might, for instance, be interested in

249. *See* Cutter & Emrich, *supra* note 70, at 110–11 (emphasizing the need for specific "knowledge about who the most socially vulnerable people are within a population and where those less resilient reside").

mapping areas of high poverty, or areas that contain hazardous waste facilities or flood plains. Ideally, the tool would be used across all federal agencies and capable of being incorporated into the mapping platforms of other agencies. The tool would also be accessible to officials in local, state, and tribal governments, and (in some form) to the public.

Such a mapping tool could be used by government agencies at all levels and at each stage of the Circle of Risk Management. At the planning stage, city officials could use such information to help direct resources to projects like managing storm water or reducing the heat island effect. Such information could also be incorporated into state and federal grant programs. FEMA could also include social vulnerability measures in its standards for community hazard mitigation plans. That move alone could improve the mitigation strategies of tens of thousands of municipalities.[250] At the response stage, first responders at the local and federal levels could use social-vulnerability maps to identify populations in need of special attention. Government compensation funds or rebuilding programs could use the data to create fairer mechanisms to distribute money to the most deserving or to those most in need. At the recovery stage, a national mapping tool could identify neighborhoods in need of special outreach or capacity building as communities prepare to engage the democratic process of rebuilding or redesigning affected areas. Maps like these would not only pull together the geophysical and social aspects of disasters, which we might think of as *horizontal* elements of the challenge. Because they would be designed for use at the federal, state, and local levels, these maps would also tie together the many government actors that align on the *vertical* axis, making the project more comprehensive. Federal policy would not be "one size fits all," because the tool would incorporate local data at every point.[251]

The project sounds daunting, but we already have a head start. Susan Cutter's work on SoVI provides one template for such an approach, although ideally, physical and social characteristics would be identified at a higher resolution than the county level. In addition, the EPA is developing a uniform environmental justice mapping tool

250. Verchick & Hall, *supra* note 17, at 2245 ("Tens of thousands of communities maintain hazard mitigation plans approved by FEMA"). For a discussion of how hazard mitigation plans can be used to encourage sustainability, climate adaptation, and other federal priorities, see *id.* at 2244–47 (describing a federal pilot project involving recovery after Iowa's 2008 floods).

251. *See* Cutter & Emrich, *supra* note 70, at 110–11 (noting importance of local information in federal policy making).

that could become the basis for such an effort. The EPA's proposed tool, an important part of its "Plan EJ 2014" strategy,[252] would combine its many internal screening tools and other Geographic Information System (GIS) applications into a single, coordinated "GeoPlatform" that could be used to identify overlaps of environmental hazards and certain characteristics of social vulnerability.[253] While full details are not yet available, such a screening tool could theoretically be used to identify social and environmental "hotspots" where additional resources like technical assistance or enforcement activities should be directed.

GIS applications like these have direct application to disaster response. During clean up activities following the BP Blowout, the EPA and other agencies used a variety of mapping tools, including EPA's EJView application, to understand how factors related to health, environmental exposure, and demographics were affecting local communities.[254] The applications helped "identify locations of overburdened communities in comparison to areas of waste disposal, pinpoint locations where oil had reached the shore, and identify locations of community centers where people could get assistance."[255]

D. The Voice of Injustice

These two strategies—a solidifying executive order and a nationally consistent GIS mapping tool—might strike some readers as disappointingly "top down." That is fine. There is plenty of room for more ideas to bloom—from the bottom and the top and the middle. But at some point in the early stage we will need a framework of national dimensions. And we will need a set of reliable geophysical and demographic data to inform all of the proposals and policy visions that later follow. Shklar had it right: "When the victims of disasters refuse to resign themselves to their misfortunes and cry out in anger, we hear the voice of the sense of injustice."[256] Now it is time to pay attention.

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252. *See generally* U.S. ENVTL. PROT. AGENCY, PLAN EJ 2014 (2011) (describing initiatives for pursuing environmental justice throughout the agency).

253. *Id.* at 24.

254. *Id.*

255. *Id.*

256. SHKLAR, *supra* note 9, at 83.