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What Happens Next: Metaphor in Disaster Recovery Policy

I. INTRODUCTION

In the aftermath of a natural disaster, we routinely ask—and attempt to answer—*What happened?* And then we turn to *What happens next?* The first question we answer with facts, statistics, and narrative. The second question requires an answer that is less definite, more abstract. To understand the abstract—in this case, answering *What happens next?* after a natural disaster—we employ metaphor to describe and promote recovery efforts. Metaphor creates a perception of what the recovery will look like, how it will be accomplished, and what the ultimate result will be. By invoking a specific metaphor, government officials, media outlets, and citizens emphasize certain aspects of recovery over others,[1] drawing attention to what they consider priorities or encouraging a specific attitude in the recovering community.

This Comment will first provide an overview of metaphor and how it applies in the disaster recovery context. It will then consider two specific metaphors for disaster recovery—one historical and one contemporary—to examine how metaphor can both help and hinder disaster recovery. Finally, this Comment will discuss resilience, a term often used when discussing disaster recovery, but rarely recognized for what it is—a metaphor. This Comment argues that by acknowledging resilience as a metaphor, the varying definitions and perceptions of resilience will become more useful to understanding disaster recovery.

II. THE NECESSARY METAPHOR: DISASTER AND RECOVERY AS REIFICATION

In a world driven by science, technology, and the media, we answer the question *What happened?* with facts, statistics, and

1. Elizabeth G. Thornburg, *Metaphors Matter: How Images of Battle, Sports, and Sex Shape the Adversary System*, 10 WIS. WOMEN'S L.J. 225, 230 (1995) ("[Metaphors] structure the way we perceive reality, and they structure it in a way that chooses to emphasize certain parts of our experience at the expense of others.").

narratives, establishing the contours of a disaster. . Consider, for example, the image tracking of Hurricane Sandy by both the National Oceanic and Atmospheric Administration (NOAA) and NASA, which gave us a detailed description of how the Superstorm began as a tropical wave off the coast of Africa on October 11, 2012, developed into a tropical depression moving across the Caribbean Sea by October 20, became Tropical Storm Sandy on October 22, and accelerated into Hurricane Sandy on October 24.[2] As Hurricane Sandy made its way towards the east coast of the United States, it joined with a nor'easter storm, morphing into what some called a Frankenstorm.[3] While NASA and NOAA tracked the pending disaster from afar, government at all levels—city, state, and federal—began to prepare. On October 28, 2012, President Obama signed emergency declarations for Connecticut, the District of Columbia, Maryland, Massachusetts, New Jersey, and New York, making federal funds and support available to state governments in anticipation of the hurricane making landfall the next day.[4] When Hurricane Sandy made landfall in New Jersey on October 29, government officials, news stations, and social media were all able to report not just where, but how the Superstorm had arrived.[5]

A natural disaster, however, is more than a hurricane or another catastrophe in nature; it is the catastrophe's interaction with and

2. Nat'l Oceanic & Atmospheric Admin. (NOAA), *Service Assessment: Hurricane/Post-Tropical Cyclone Sandy, October 22–29, 2012*, SERVICE ASSESSMENT 8–9 (May 2013) [hereinafter NWS Service Assessment] http://www.nws.noaa.gov/os/assessments/pdfs/Sandy13.pdf; *Two Years Later: NASA Remembers Hurricane Sandy*, NASA (Oct. 29, 2014), https://www.nasa.gov/content/goddard/two-years-later-nasa-remembers-hurricane-sandy/index.html#.VFbzEPnF-So.

3. Daily Mail Reporter, *How Frankenstorm was created: Hurricane Sandy's clash with vicious nor'easter made for once-in-a-lifetime event*, DAILY MAIL ONLINE (Oct. 28, 2012, 11:05 PM), http://www.dailymail.co.uk/news/article-2224629/Hurricane-Sandy-path-2012-How-Frankenstorm-created.html#ixzz2nuawmoPA ("'The total is greater than the sum of the individual parts,' said Louis Uccellini, the environmental prediction chief of the National Oceanic and Atmospheric Administration meteorologists about the dramatic weather."); Bryan Walsh, *Frankenstorm: Why Hurricane Sandy will be Historic*, TIME (Oct. 29, 2012), http://science.time.com/2012/10/29/frankenstorm-why-hurricane-sandy-will-be-historic.

4. *Hurricane Sandy: Timeline*, FEMA, http://www.fema.gov/hurricane-sandy-timeline (last updated July 24, 2014, 4:00 PM).

5. See *Id*. FEMA's webpage also gives a complete timeline of government action taken before, during, and after Hurricane Sandy.

effect on human populations.[6] To answer *What happened?* requires more than just knowing how the catastrophe arrived; it also requires an accounting of the catastrophe's effect on human populations. In the aftermath of Hurricane Sandy, government, news media, and social media all rushed forward with answers, establishing the contours of the disaster. Across the Atlantic basin, there were at least 234 deaths caused by Sandy.[7] In the United States, seventy-two people were killed directly—by floodwaters, falling trees, and other hurricane-related causes—and eighty-seven were killed indirectly, by the after-effects of the storm, including hypothermia and carbon monoxide poisoning.[8] Sandy was the second-costliest hurricane in U.S. history, causing over $65 billion in damage.[9] Although the storm ran along the East Coast and made landfall in New Jersey, Sandy ultimately affected twenty-four states with flooding, blizzards, strong winds, and resulting power outages.[10] For the first time since 1888, the New York Stock Exchange was closed for two days in a row.[11] The information about Hurricane Sandy, from the wind-span of the storm (about 1,000 miles in diameter)[12] to the number of people seeking refuge from the storm to the names of the dead and the stories of the survivors, gave answers to *What happened?* in specific scientific, statistical, and narrative terms. As the numbers, names, and stories of Hurricane Sandy were collected and recorded, the contours of the natural disaster, though complicated, became concrete.[13]

6. FEMA, NATIONAL DISASTER RECOVERY FRAMEWORK: STRENGTHENING DISASTER RECOVERY FOR THE NATION 81 (2011), http://www.fema.gov/media-library-data/20130726-1820-25045-5325/508_ndrf.pdf (defining a "Major Disaster" as "any natural catastrophe . . . of sufficient severity and magnitude to [cause] damage, loss, hardship or suffering).

7. Eric S. Blake et al., *Tropical Cyclone Report: Hurricane Sandy (AL182012) 22–29 October 2012*, NATIONAL HURRICANE CENTER 1 (Feb. 12, 2013), *available at* http://www.nhc.noaa.gov/data/tcr/AL182012_Sandy.pdf ("There were at least 147 direct deaths recorded across the Atlantic basin due to Sandy, with 72 of these fatalities occurring in the mid-Atlantic and northeastern United States."). *Id.* at 14 ("At least 87 deaths . . . were indirectly associated with Sandy or its remnants in the United States.").

8. *Id.* at 14.

9. *Id.* at 1.

10. NWS Service Assessment, *supra* note 2, at 1.

11. Blake, *supra* note 7, at 18.

12. NWS Service Assessment, *supra* note 2, at 1.

13. John Friedlander, *Abstract, Concrete, General, and Specific Terms*, GRAMMAR.CCC.COMMENT.EDU, http://grammar.ccc.commnet.edu/grammar/compositi

The concrete answers to *What happened?* are a natural starting place to answer the inevitable follow-up question, *What happens next?*, which necessarily encompasses both short- and long-term recovery. Although many of those answers will become concrete—federal funding, insurance payouts, restoration of electricity and transportation—they are, in fact, abstract, inherently ambiguous ideas[14] that lack physical references.[15] President Obama's speech to the Red Cross the day after Hurricane Sandy made landfall in New Jersey illustrates the difference between concrete and abstract language. He first described what had happened during the storm with concrete images—what people had been able to see:

> [D]uring the darkness of the storm, I think we also saw what's brightest in America. I think all of us obviously have been shocked by the force of Mother Nature as we watch it on television. At the same time, we've also seen nurses at NYU Hospital carrying fragile newborns to safety. We've seen incredibly brave firefighters in Queens, waist-deep in water, battling infernos and rescuing people in boats.[16]

President Obama then followed with more abstract language, an idea of what would happen next:

> This is a tough time for a lot of people—millions of folks all across the Eastern Seaboard. But America is tougher, and we're tougher because we pull together. We leave nobody behind. We make sure that we respond as a nation and remind ourselves that whenever an American is in need, all of us stand together to make sure that we're providing the help that's necessary.[17]

Although President Obama was able to describe Americans as "tough" and a people who "pull together . . . . leav[ing] nobody

on/abstract.htm (defining "concrete" language as "objects or events that are available to the senses).

14. Nat'l Ctr. for Disaster Preparedness (NCDP), Earth Inst., Colum. Univ., *From the Directors: Sandy Recovery a Year Later*, HURRICANE SANDY, OCTOBER 2012, http://ncdp.columbia.edu/microsite-page/hurricane-sandy-october-2012/sandy-recovery-1-year-later ("Predictably, the answers are ambiguous. There is no single 'recovery snapshot' or data repository to which to turn, and the answers one gets to those questions [about whether recovery has been achieved] depends on who is being asked.").

15. Friedlander, *supra* note 13.

16. Barack Obama, Remarks by the President at the American Red Cross (Oct. 30, 2012, 2:18 PM) (transcript available at http://www.whitehouse.gov/the-press-office/2012/10/30/remarks-president-american-red-cross).

17. *Id.*

behind," what those descriptions meant in the days following Hurricane Sandy was still abstract, without concrete evidence of what response and recovery would look like.

This does not mean that abstract ideas cannot be described or even understood. To understand the abstract, language turns to metaphor.[18] The simple definition of metaphor is a "comparison made by referring to one thing as another,"[19] which Aristotle, the first to write extensively on metaphor, described as presenting "similarity in dissimilars."[20] By comparing an abstract idea, such as disaster recovery,[21] to a concrete idea, the abstract takes on the form and language of the concrete. Through metaphor, what was vague or unimaginable is reified—it comes into focus and can be conceptualized as a concrete reality.

After Hurricane Sandy, the aftermath was compared to the aftermath of other disasters, including Hurricane Katrina,[22] that people knew the facts of and could build expectations around. It was also compared to less obvious and more conceptual concrete ideas. New York City Mayor Michael Bloomberg described what would happen next as "the road to recovery," using a familiar image and metaphor of moving forward.[23] U.S. Senator Kristen

18. George Lakoff and Mark Johnson argue "that metaphor is pervasive in everyday life, not just in language, but in thought and action." George Lakoff & Mark Johnson, *Conceptual Metaphor in Everyday Language*, 77 J. OF PHIL. 453, 454 (1980). This paper does not dispute that argument, and in fact agrees with it, but argues that metaphor is essential, taking on a key role in decision making, after a natural disaster.

19. Gideon Burton, *Silva Rhetoricae: The Forest of Rhetoric*, RHETORIC.BYU.EDU http://rhetoric.byu.edu/Figures/M/metaphor.htm (last updated Feb. 26, 2007).

20. Mark Johnson, *Metaphor: An Overview*, *in* ENCYCLOPEDIA OF AESTHETICS: METAPHOR (Michael Kelly ed., 2008) (quoting ARISTOTLE, POETICS 1459a (c. 350)), *available at* http://www.oxfordreference.com.erl.lib.byu.edu/view/10.1093/acref/9780195113075.001.0001/acref-9780195113075-e-0351.

21. For a discussion of how a natural disaster may be the abstract idea compared to the concrete idea of war and terrorism, and how that metaphor changes our perception of natural disasters, see Lisa Grow Sun and RonNell Andersen Jones, *Disaggregating Disasters*, 60 UCLA L. REV. 884 (2013).

22. *See* Seth McLaughlin, *Chris Christie: Superstorm Sandy recovery is just beginning in New Jersey*, THE WASHINGTON TIMES (Oct. 29, 2013, 7:25 AM), http://www.washingtontimes.com/news/2013/oct/29/chris-christie-superstorm-sandy-new-jersey/ (New Jersey Governor Chris Christie on effects of Hurricanes Katrina and Gustav on federal funding for Hurricane Sandy).

23. Press Release, NYC Office of Mayor, Mayor Bloomberg Updates New Yorkers on City Response to Hurricane Sandy (Oct. 31, 2012), *available at* http://www.nyc.gov/portal/site/nycgov/menuitem.c0935b9a57bb4ef3daf2f1c701c789a0/i

Gillibrand and other government officials compared the rebuilding and recovery to a fight, letting their constituents know that it would not be easy.[24] One year after Hurricane Sandy, the directors of the National Center for Disaster Preparedness at Columbia University employed the image of watermarks on the houses left behind in the wake of Sandy and the ongoing interior destruction of houses by mold and other damage as a metaphor for the aftermath and recovery process as a whole.[25]

With each metaphor, a new understanding of the aftermath of a natural disaster and the recovery process is formed.[26] The metaphor of the road, as previously stated, encourages moving forward and establishes a destination, while the metaphor of the fight may suggest struggle, but also power and tenacity. The metaphor of the watermarks and mold left in homes evokes both the lingering effects of the disaster and the difference between what the casual observer sees—the faint watermarks—and what those intimately connected to the disaster know—the mold and damage.[27]

Metaphors, however, are not as simple as stating that two things are similar. In placing the ideas next to each other, the dissimilarities also become apparent—in other words, to say that one thing is "like" another thing is to admit that the two things are not identical.[28] By taking into consideration how the abstract idea is *un*like the concrete idea, new perceptions of the abstract idea can be formed.[29] After Mayor Bloomberg compared recovery after Hurricane Sandy to a road, he somewhat humorously expounded his metaphor, stating, "Today our streets have too much traffic.

ndex.jsp?pageID=mayor_press_release&catID=1194&doc_name=http%3A%2F%2Fwww.nyc.gov%2Fhtml%2Fom%2Fhtml%2F2012b%2Fpr384-12.html&cc=unused1978&rc=1194&ndi=1.

24. Press Release, New York State, Governor Cuomo Holds Meeting with New York's Congressional Delegation, Mayor Bloomberg and Regional County Executives to Review Damage Assessment for the State in the Wake of Hurricane Sandy (Nov. 26, 2012), *available at* http://www.governor.ny.gov/press/11262012-damageassessment.

25. *Sandy Recovery a Year later*, *supra* note 14.

26. "Metaphor . . . provides new ways of understanding experience." Thornburg, *supra* note 1, at 228.

27. *Sandy Recovery a Year later*, *supra* note 14.

28. *See* Allen Grossman, *Summa Lyrica*, *in* THE SIGHTED SINGER 249 (1992) ("What is *like* cannot be identical. . . . The function of the particle *like* in metaphor (all metaphors being reducible to some form of the sentence 'A is like B') is to enable the perception of a relationship by *distinguishing* its terms.").

29. *See id.* at 298 ("The condition which sustains metaphor, namely that the two terms are not one, is the same condition which enables perception.").

Yesterday there was none, so I suppose that's progress, unless you're driving."[30] While the road metaphor depicted moving forward towards a destination, the actual roads of New York City had been brought to a near standstill without public transportation,[31] a condition which could have altered New Yorkers' perception of recovery.

The significance of metaphor is not simply that a metaphor was used, but that a specific metaphor was used, establishing and defining the abstract concepts of disaster recovery. Just as a variety of metaphors were applied to the Hurricane Sandy recovery, any number of metaphors has been applied to disasters over time. In order to understand the significance of a particular metaphor, Sections II and III of this Comment each examine a metaphor, one historical and one contemporary, respectively, before turning to the importance of recognizing a familiar term in recovery—resilience—as a metaphor.

III. THE HISTORICAL METAPHOR: RECOVERY AS "RISING FROM THE ASHES"

In a span of thirty-five years, two burgeoning American cities, Chicago and San Francisco, were destroyed by fire. For two days in October of 1871, a small barn fire, propelled by strong winds and fed by land parched from drought, became the Great Chicago Fire.[32] Three hundred people died and 100,000 people, nearly one-third of the population, were left homeless. Nearly 18,000 buildings were destroyed by the fire.[33] The day after the fire was finally extinguished, the Chicago Tribune declared, "Cheer Up . . . looking upon the ashes of thirty years' accumulations, the people of this once beautiful city have resolved that CHICAGO SHALL RISE AGAIN."[34] William H. Carter, the president and one of three commissioners of the city's Board of Public Works, wrote his brother on October 15, 1871, stating, "Our beautiful city is in ruins. The greatest calamity

30. NYC Office of Mayor, *supra* note 23.

31. *Id.*

32. Kevin Rozario, *Making Progress: Disaster Narratives and the Art of Optimism in Modern America, in* THE RESILIENT CITY: HOW MODERN CITIES RECOVER FROM DISASTER 28 (Lawrence J. Vale & Thomas J. Campanella eds., 2005).

33. *Id.*

34. *The Chicago Fire*, CHICAGO TRIBUNE, Oct. 8, 1871, *available at* http://www.chicagotribune.com/news/politics/chi-chicagodays-fire-story,0,2790977.story.

that ever befell a city is upon us."[35] But after recounting the events of the fire, Carter employed a metaphor to describe what would happen next: "Chicago is burned down but not despairing—she has the energy and push and will rise phoenix like from the ashes."[36]

On the morning of April 18, 1906, San Francisco experienced what is now estimated to be a 7.8 magnitude earthquake.[37] The earthquake destroyed "some of the city's frailer structures," but the majority of the damage was done by fires that followed the earthquake and burned through the city for three days.[38] Over 80% of the city was destroyed. At the time, approximately 700 deaths were reported, but the actual death toll has been estimated to be more than 3,000.[39] More than half of the city's 400,000 residents were without shelter.[40] Despite the destruction, George Harvey, the editor of *Harper's*, expressed a common sentiment, assuring subscribers that the city was "certain to arise quickly from its ashes, greater and more beautiful than ever."[41] San Francisco had, in fact, risen from the ashes after fires and earthquakes—although none as devastating as the 1906 earthquake—so many times that the symbol on the San Francisco city flag was a phoenix rising from the ashes.[42]

The image of the phoenix rising from the ashes is a metaphor that easily lends itself to cities destroyed by fire, but the metaphor is more complex than just recovering from fire. The phoenix, a bird in Egyptian mythology, lived for five hundred years before burning itself on a sacrificial fire. From that fire sprung a new, young phoenix, which would in turn live for five hundred years before

35. Letter from William H. Carter, President, Chicago Board of Public Works, to His Brother (Oct. 15, 1871), *available at* http://www.greatchicagofire.org/conflagration-library/william-h-carter-tells-his-brother-sad-news.

36. *Id*.

37. *See* Rozario, *supra* note 32, at 28. *See also* Phillip W. Stoffer, *The San Andreas Fault in the San Francisco Bay Area, California: A Geology Fieldtrip Guidebook to Selected Stops on Public Lands* (2005), *available at* http://pubs.usgs.gov/of/2005/1127/chapter1.pdf.

38. Rozario, *supra* note 32, at 28; *see also* Stoffer, *supra* note 37, at 5–6.

39. Stoffer, *supra* note 37, at 5–6. *See also* Kristi Finefield, *San Francisco: Before and After the 1906 Earthquake and Fire*, LIBRARY OF CONGRESS BLOG (Apr. 18, 2012), http://blogs.loc.gov/picturethis/2012/04/san-francisco-before-and-after-the-1906-earthquake-and-fire/.

40. Finefeld, *supra* note 39.

41. Rozario, *supra* note 32, at 31.

42. Finefield, *supra* note 39.

burning itself in a never-ending cycle.[43] Over time, the phoenix became a Christian symbol of resurrection and rebirth.[44] Although the phoenix was mythical, the concrete image of rising from the ashes drove both the cities of Chicago and San Francisco after their respective disasters. Chicago was rebuilt within two years, with 5,000 makeshift buildings ready for use within a week of the fire.[45] "[E]very story about the fire testified[] that the death of Chicago was actually the prerequisite for its more glorious rebirth,"[46] manifested by Chicago becoming the nation's second-largest metropolis by 1890. San Francisco was also quick to rebuild, with a new city built within four years[47] and ready to host the Panama Pacific International Exposition in 1915; "[i]n fact, rubble from the 1906 earthquake was used to create the land needed for the . . . exposition's impressive structures. On the ashes of the past, the city rose again."[48]

While both cities were celebrated for rising like the phoenix from the ashes, the metaphor fueled expectations of a recovery that was immediate and the expectation that the cities would be as good as, and in many cases better, than they were before the disasters. In Chicago, the process of rebuilding claimed more lives than the fire, "with as many as twelve construction workers dying each day because of the need for speed and inattention to safety."[49] In San Francisco, rather than taking the time to consider how the new city might be built, the city was rebuilt "at a rate and manner which made the city not only less beautiful than was possible, but more dangerous. The rubble of the 1906 disaster was pushed into the Bay; buildings were built on it."[50] It was feared that "[t]hose buildings [would] be among the most vulnerable when the next earthquake

43. *Phoenix Definition*, OXFORD COMPANION TO WORLD MYTHOLOGY (David Leeming ed., 2005), *available at* http://www.oxfordreference.com.erl.lib.byu.edu/view/10.1093/acref/9780195156690.001.0001/acref-9780195156690-e-1268?rskey=5lFj6N&result=1.

44. *Id.*

45. Rozario, *supra* note 32, at 29.

46. Rozario, *supra* note 32, at 36.

47. *Id.* at 29.

48. Finefield, *supra* note 39.

49. Rozario, *supra* note 32, at 41.

50. Rutherford H. Platt, *Planning and Land Use Adjustments in Historical Perspective*, *in* COOPERATING WITH NATURE: CONFRONTING NATURAL HAZARDS WITH LAND-USE PLANNING FOR SUSTAINABLE COMMUNITIES 29, 34 (Robert J. Burby ed., 1998) (quoting G. THOMAS & M. M. WITTS, THE SAN FRANCISCO EARTHQUAKE 274 (1971)).

[came]."[51] San Francisco's vulnerability was most clearly on display eighty-three years later in the Loma Prieta earthquake.[52]

The historical metaphor of the phoenix rising from the ashes illustrates that what a disaster is compared to is already a part of the culture of the people affected by the disaster—a conclusion which continues in contemporary disaster metaphors. The phoenix had been placed on the San Francisco flag in 1900, while the Christian image of resurrection was a widely held belief in the United States in the late 1800s. Chicago embraced this metaphor of resurrection, as evidenced in the poem "Chicago" by John Greenleaf Whittier.[53] Whittier describes the fall of the city, concluding with "The City of the West is dead!" before calling on the city to "Rise" and "from thee throw / The ashen sackcloth of thy woe" in order to rebuild as a manifestation of Christ's humanity.[54] Once the nature of the metaphor is established, we can see how the metaphor drives the expectations and outcome of recovery.

IV. THE CONTEMPORARY METAPHOR: DISASTER AS WAR, RECOVERY AS VICTORY

Aristotle said that "metaphors . . . must not be far-fetched; rather, we must draw them from kindred and similar things; the kinship must be seen the moment the words are uttered."[55] Not only must the things be "kindred," but to understand the abstract, we must compare the thing to something we already know and understand. The cities of Chicago and San Francisco turned to the mythical image of the phoenix and the Christian belief in resurrection to envision their cities rising from the ashes. Since those disasters, a new metaphor has come to the forefront to describe disasters and conceptualize recovery: war and, after 9/11,

51. *Id.*

52. Platt, *supra* note 51 ("[T]he city's Marina district, built on 1906 rubble, sustained heavy damage in the 1989 Loma Prieta earthquake."); *see also* Stoffer, *supra* note 37 (comparing the 1906 and 1989 earthquakes).

53. John Greenleaf Whittier, *Chicago*, *reprinted in* JAMES W. SHEAHAN & GEORGE P. UPTON, THE GREAT CONFLAGRATION OF CHICAGO: ITS PAST, PRESENT, AND FUTURE 357, 357–58 (1872).

54. *Id.*

55. Gerald Lebovits, *Not Mere Rhetoric: Metaphors and Similes*, 74 N.Y. ST. B.A. J. 64, 64 (2002) (quoting ARISTOTLE, THE RHETORIC OF ARISTOTLE 188 (Lane Cooper trans., 1932)).

terrorism.[56] The prevalence of war images, both in the news media and popular culture, creates an easy comparison that will be quickly understood after a natural disaster. And that comparison may be accurate—there are similar forms of devastation in terms of lives lost and property destroyed, and there may be a similar need for resources in the aftermath.[57]

War was one of the most consistently used metaphors that became the narrative of Hurricane Katrina.[58] After touring the aftermath of Hurricane Katrina, Mississippi Governor Haley Barbour said, "I can only imagine that this is what Hiroshima looked like 60 years ago."[59] Similarly, war was used as a metaphor to describe the aftermath of Hurricane Sandy. Mayor Bloomberg said after Hurricane Sandy that "[t]o describe it as looking like pictures we have seen at the end of World War II is not overstating it."[60] Those affected by Hurricane Sandy have repeatedly described it as a "war zone."[61] Other disasters, including epidemics, wildfires, and technological disasters, have also employed the metaphor and overall rhetoric of war.[62] Lisa Grow Sun and RonNell Andersen Jones argue that when natural disasters are compared to war and terrorism, or

56. *See* Sun & Jones, *supra* note 21; Justin Pidot, *Deconstructing Disaster*, 2013 BYU L. REV. 213 (2013).

57. Pidot, *supra* note 56, at 221.

58. Sun & Jones, *supra* note 21, at 916.

59. *U.S. Dealing with Katrina's Wrath as Death Toll Soars*, N.Y. TIMES, Aug. 31, 2005, http://www.nytimes.com/2005/08/31/world/americas/31iht-web.0831kat.html?pagewanted=all&_r=0.

60. James Barron, *After the Devastation, a Daunting Recovery,* N.Y. TIMES, Oct. 30, 2012, http://www.nytimes.com/2012/10/31/us/hurricane-sandy-barrels-region-leaving-battered-path.html?pagewanted%253Dall.

61. *See, e.g.*, Chris Kirkham, *Hurricane Sandy: In Connecticut, Storm Leaves Mess of Downed Trees and Flooded Roadways*, HUFFINGTON POST (Oct. 30, 2012), http://www.huffingtonpost.com/2012/10/30/hurricane-sandy-connecticut_n_2044402.html ("'This is like a war zone,' Lynne Schuster said. 'What are we gonna do now?'"); *Hurricane Sandy: Volunteering in a War Zone*, ABC NEWS (Nov. 14, 2012), http://abcnews.go.com/US/video/hurricane-sandy-volunteering-war-zone-17715843 ("It looks like a war zone."); Erik Wemple, *Hurricane Sandy: TV stands by its live shots*, WASHINGTON POST (Oct. 29, 2012), http://www.washingtonpost.com/blogs/erik-wemple/post/hurricane-sandy-tv-stands-by-its-live-shots/2012/10/29/26923c56-21f5-11e2-ac85-e669876c6a24_blog.html (comparing getting live shots of Hurricane Sandy to getting live shots in war zones and conflict areas).

62. Sun & Jones, *supra* note 21, at 920 (citation omitted) (noting that one critic has stated, "the discourse of [wildland] fire management is thoroughly tainted with war metaphors[] [f]rom terms such as 'initial *attack*' to the foundational concept of 'fire*fighting*'").

when war rhetoric is used in relation to a natural disaster, it shapes both the public perception of the disaster and the public officials' response to the disaster.[63] Following this line of reasoning, when disaster is compared to war, the process of disaster recovery is perceived as being like recovering from war. Justin Pidot concludes that, "Couching disaster in these [war] terms infuses disaster response with a powerful symbolism. Rebuilding in the wake of a disaster becomes an imperative. To do otherwise would be to concede defeat."[64]

War as a metaphor for disaster prompts a rallying cry of nationalism in recovery. After Hurricane Sandy, President Obama repeatedly called on Americans to stand strong together: "America is tougher, and we're tougher because we pull together. We leave nobody behind. We make sure that we respond as a nation and remind ourselves that whenever an American is in need, all of us stand together to make sure that we're providing the help that's necessary."[65] At the same time, war introduces a false dynamic to the recovery process: nature as the aggressor and human populations as victims. Placed in this dynamic, recovery becomes an act of victory, of refusing to let nature win. Louisiana Governor Kathleen Blanco invoked this metaphor testifying before Congress after Hurricane Katrina, stating, "After World War II our decision to rebuild Europe was farsighted and courageous. History will treat us well if we exhibit the same kind of political courage now."[66] But where there was a clear opponent and objective in World War II and a clear need to rebuild, there was far more uncertainty after Hurricane Katrina: the unfeeling forces of nature were an undefeatable enemy that could return, the objective and definition of victory were unclear, and rebuilding New Orleans would put the victims back in harm's way.

The metaphor here shows how war and natural disaster, the two things compared, are dissimilar: in war there is a conscious agent we are responding to, one that we are invested in showing we are strong in the face of their attacks, while natural disasters are the result of a natural occurrence and the choices we have made in

63. *Id.* at 917 ("War rhetoric not only infused media reporting about Katrina but also shaped public officials' characterization of the disaster and the appropriate—that is, military—response.").

64. Pidot, *supra* note 56, at 224.

65. Obama, *supra* note 16.

66. Pidot, *supra* note 56, at 233 (citation omitted).

terms of where to live, what to build, and so forth. By recognizing these dissimilarities, there is the opportunity to adjust policy and perceptions of disaster zones to more accurately assess what happens next.

V. THE FORGOTTEN METAPHOR: RECOVERY AS RESILIENCE

After Hurricane Sandy, President Obama signed an executive order appointing a Hurricane Sandy Rebuilding Task Force.[67] In August 2013, the task force released a rebuilding strategy subtitled "Stronger Communities, A Resilient Region." On a similar timeline, Mayor Bloomberg formed the Special Initiative on Resilience and Rebuilding, the result of which was a "roadmap for producing a truly sustainable 21st century New York," titled "A Stronger, More Resilient New York."[68] Throughout the discussion of *What happens next?* the word *resilience* and its variations—resilient and resiliency—were used to describe both the people who lived in the affected areas and America as a whole. Two days after Hurricane Sandy made landfall, New Jersey Governor Chris Christie urged his state to not "permit that sorrow [of loss] to replace the resilience that I know all New Jerseyans have. And so we will get up and we'll get this thing rebuilt, and we'll put things back together, because that's what this state is all about and always has been all about."[69] In a speech to the Red Cross, President Obama encouraged volunteers to "sustain that spirit of resilience" necessary to rebuild after Hurricane Sandy, which he illustrated by the story of a rescue swimmer sent by the Coast Guard to help save a sinking ship off the coast of North Carolina. The swimmer arrived at the boat and said, "I understand you guys need a ride."[70] The illustration of being not only strong and capable, but also a good neighbor, was how President Obama defined *resilience*.

67. HURRICANE SANDY REBUILDING TASK FORCE, HURRICANE SANDY REBUILDING STRATEGY: STRONGER COMMUNITIES, A RESILIENT REGION 13 (2013), http://portal.hud.gov/hudportal/documents/huddoc?id=hsrebuildingstrategy.pdf.

68. Michael Bloomberg, *Foreword from the Mayor*, *in* PLANYC, A STRONGER, MORE RESILIENT NEW YORK 1 (2013), *available at* http://www.nyc.gov/html/sirr/html/report/report.shtml.

69. Chris Christy, Governor of New Jersey, Remarks by the President and Governor Christie after Surveying Damage from Hurricane Sandy (Oct. 31, 2012) (transcript available at http://www.whitehouse.gov/the-press-office/2012/10/31/remarks-president-and-governor-christie-after-surveying-damage-hurricane).

70. Obama, *supra* note 16.

The use of resilience to discuss disasters, while perhaps more prominent after Hurricane Sandy, is nothing new. The words *resilient*, *resilience*, and *resiliency* appear eleven times in the National Response Framework (NRF) issued by the Department of Homeland Security and fifty-six times in the National Disaster Recovery Framework (NDRF), including in the name of one of nine core NDRF principles.[71] The NRF outlines how the federal government responds to all disasters and emergencies[72] and presents the National Preparedness Goal, which "establishes the capabilities and outcomes the Nation must accomplish across . . . five mission areas [prevention, protection, mitigation, response, and recovery] in order to be secure and resilient."[73] The NDRF is prepared by FEMA and is designed as a companion to the NRF, "focus[ing] on how best to restore, redevelop and revitalize the health, social, economic, natural and environmental fabric of the community and build a more resilient Nation."[74] The NDRF defines *resilience* as the "[a]bility to adapt to changing conditions and withstand and rapidly recover from disruption due to emergencies"[75] and repeatedly invokes *resiliency* as a goal of both disaster preparedness and recovery.

Use of the term *resilience* is not limited to the National Response and Disaster Recovery Frameworks. The United Nations international strategy for disaster reduction, the Hyogo Framework, is subtitled "Building the Resilience of Nations and Communities to Disaster."[76] In May 2012, the United Nations issued a "thematic think piece" on disaster risk and resilience.[77] Each organization

71. NDRF, *supra* note 6, at 3–4.

72. DEPARTMENT OF HOMELAND SECURITY, NATIONAL RESPONSE FRAMEWORK i (2008), *available at* http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf.

73. *Id*. at 1.

74. NDRF, *supra* note 6, at 1.

75. *Id*. at 81.

76. United Nations International Strategy for Disaster Reduction (UNISDR), *Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disaster* (2005), *available at* http://www.unisdr.org/2005/wcdr/intergover/official-doc/L-docs/Hyogo-framework-for-action-english.pdf (hereinafter *Hyogo Framework*). The word resilience and its variations appear twenty-four times. "The Conference provided a unique opportunity to promote a strategic and systematic approach to reducing vulnerabilities and risks to hazards. It underscored the need for, and identified ways of, building the resilience of nations and communities to disasters." *Id*. at 1.

77. *Disaster Risk and Resilience* (hereinafter *Disaster Risk*), UN SYSTEM TASK TEAM ON THE POST-2015 UN DEVELOPMENT AGENDA. The word resilience and its variations appear twenty-five times.

defined *resilience* differently. The Hyogo Framework employed a 2004 UN/ISDR definition of *resilience* as

> The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organising [sic] itself to increase this capacity for learning from past disasters for better future protection and to improve risk reduction measures.[78]

The UN's May 2012 think piece defined *resilience* as "the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions."[79] The previously mentioned rebuilding strategy prepared by the Hurricane Sandy Rebuilding Task Force defined *resilience* as "the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions."[80]

There is a common thread running through these four definitions. Each definition identifies resilience as an ability—or, in the Hyogo Framework, a capacity—"in a person or thing which makes an action possible; suitable or sufficient power or proficiency; capability, [or] capacity *to* do . . . something."[81] What that ability is, however, changes or multiplies in characteristics with each definition. It is the ability to adapt, withstand, and rapidly recover; the ability to resist or change; the ability to organize; the ability to resist, absorb, accommodate, and recover; and the ability to anticipate, prepare, respond, and recover. And what people, communities, and nations are supposed to adapt, withstand, respond, and recover from changes with each definition.[82] When New York City employed the definition of *resilient* in its post-Hurricane Sandy report, "A Stronger, More Resilient New York," it whittled down the definition to a rallying

78. *Hyogo Framework*, *supra* note 76, at 4 n. 7.

79. *Disaster Risk*, *supra* note 77, at 3 n.1.

80. HURRICANE SANDY REBUILDING TASK FORCE, *supra* note 67, at 169.

81. *Ability Definition*, OXFORD ENGLISH DICTIONARY (2014) (emphasis in original).

82. Fiona Tweed & Gordon Walker, *Some Lessons for Resilience from the 2011 Multi-disaster in Japan*, 16 LOCAL ENV'T 937, 938 (2011) ("This frenzy of 'resilience-speak' has at times been rather uncritical and unreflective in character, with insufficient questioning of exactly what it means to be resilient and for whom resilience is needed.").

cry: "1. Able to bounce back after change or adversity. 2. Capable of preparing for, responding to, and recovering from difficult conditions. Syn.: TOUGH. See also: New York City."[83]

What these definitions do not include is that *resilience* is a metaphor and, like the metaphors previously discussed, establishes an understanding and creates expectations for recovery.[84] Recognizing that *resilience* functions as a metaphor may complicate its definition, but reading it as a metaphor will also expand our understanding of resiliency, especially as applied to disasters. Over the past decade,[85] *resilience* has gone from being an attention-getting buzzword in oratories to a core factor in local, national, and international disaster planning.[86] With each use in government planning, academic essays, newspaper reports, and online blogs, the definition of *resilience* becomes something slightly different, changing with the speaker and with the audience addressed.[87] Comparing *resilience* to disaster preparation, response, and recovery creates a dialogue for scholars to address, for example, whether a community should "bounce back" or "bounce forward" after a disaster; whether a community that is resilient recovers in the same way as a community that is vulnerable; and whether resiliency can only be seen in hindsight. In order to understand the metaphor, it is necessary to consider both the origins

83. Bloomberg, *supra* note 68, at cover.

84. Fran H. Norris et al. notes that "[w]hen applied to people and their environments, 'resilience' is fundamentally a metaphor," and suggests that, in hindsight, "the social and psychological sciences should have created their own language, free from inherent meanings, but the term is probably here to stay." Fran H. Norris et al., *Community Resilience as a Metaphor, Theory, Set of Capacities, and Strategy for Disaster Readiness*, 41 AM. J. COMMUNITY PSYCHOLOGY 127, 127–28 (2008).

85. Siambabala Bernard Manyena, Geoff O'Brien, Phil O'Keefe & Joanne Rose, Editorial, *Disaster resilience: a bounce back or bounce forward ability?*, 16 LOCAL ENV'T, May 2011, at 417. ("The disaster resilience paradigm has gained currency since the start of the new millennium.").

86. K. Crowley & J.R. Elliott, *Earthquake Disasters and resilience in the global North: Lessons from New Zealand and Japan*, 178 GEOGRAPHICAL J. 208, 209 (2012). ("This constructive 'buzz' word echoes down the corridors of universities, humanitarian agencies and governments across the global North uniting elements of disaster risk reduction.").

87. SUSAN L. CUTTER ET AL., COMMUNITY AND REGIONAL RESILIENCE: PERSPECTIVES FROM HAZARDS, DISASTERS, AND EMERGENCY MANAGEMENT 1 (2008) (stating that "there is no common definition of resilience"). S*ee also*, Crowley & Elliott, *supra* note 86, at 208–09 ("[R]esilience and vulnerability are central concepts in understanding disasters; despite this, resilience is often poorly defined."); Tweed & Walker, *supra* note 82, at 937 ("Resilience has become a widely enrolled concept and objective for governance, applied to a broad suite of potential shocks to the conduct and organization of 'normal' life.") (citations omitted).

and appropriations of *resilience*. This will in turn lead to a better understanding of how *resilience* can be used to approach disasters holistically, from disaster preparation to recovery and rebuilding after a disaster.

A. The Definitions of Resilience

The Oxford English Dictionary (OED) offers five definitions of *resilience*,[88] three of which are applicable to this discussion. The first and oldest definition of *resilience* is "[t]he action or act of rebounding or springing back; rebound, recoil."[89] Contemporary discussions of disaster resilience refashion this definition as an ability to "bounce back."[90] Both the original definition and the contemporary definition suggest two key components of a disaster resilience metaphor: a return to normalcy and the speed at which normalcy is achieved. There may also be the expectation that a community will not just recover from a disaster, but that the community will return to the state it was in before the disaster. The ramifications of this definition will be addressed in Part B of this section.

The second OED definition of *resilience* applicable to disaster policy is "[e]lasticity," or in mechanical terms, "[t]he energy per unit volume absorbed by a material when it is subjected to strain; the value of this at the elastic limit."[91] Again there is the suggestion of "bounce back,"[92] but there is also a force exerted on the object causing strain. A disaster is not simply the result of an event occurring in nature, but the force of that event exerted on a community.[93]

> [M]ost serious students of disaster have moved from defining a disaster as the hazardous event itself to defining a disaster in terms of the impact that the hazardous event has on people and property—an impact that is determined not only by the magnitude

88. *Resilience Definition*, OXFORD ENGLISH DICTIONARY (2014).

89. *Id.*

90. Manyena et al., *supra* note 85.

91. *Resilience Definition*, OXFORD ENGLISH DICTIONARY (2014).

92. CUTTER ET AL., *supra* note 87, at 4 ("Elasticity (or the ability to bounce back or rebound) is a common adjective used to described [sic] resilient systems or communities.").

93. Crowley & Elliott, *supra* note 86, at 208 ("A disaster is . . . more than just the occurrence of a hazard event; it is the preventable loss of lives and elements of value that cripple a country and have a global resonance.") (citations omitted).

> of the event, but also by human interaction with nature, by our choices about where and how we live.[94]

The last OED definition of *resilience* aligns more closely with contemporary disaster resilience definitions: "[t]he quality or fact of being able to recover quickly or easily from, or resist being affected by, a misfortune, shock, illness, etc.; robustness; adaptability."[95] This definition, however, was first applied to disciplines as varied as physics, mathematics, and psychology before being extended to disaster resilience.[96] This demonstrates how one concrete concept—resilience—can become a metaphor for any number of abstract ideas. When this happens, however, it is important to carefully consider how the original concrete concept is both similar and dissimilar to the abstract idea that is being defined. The various definitions of resilience in disaster recovery can be explained in part because the definitions are an amalgam of the original definitions of resilience and resilience as a metaphor in psychology or urban planning. While these metaphors contribute to disaster recovery, they are removed one step from the subject at hand, and should only supplement the metaphor of "disaster recovery is like resilience," rather than overshadowing or even supplanting it.

B. What Resilience Is and Is Not

Simply invoking *resilience* necessarily creates a comparison between actual resilience—"the capacity of a material or system to return to equilibrium after a displacement"[97]—and disaster resilience, which exposes the ways communities, infrastructure, etc., cannot return to equilibrium after disasters. But scholars have found it necessary to create further comparisons when describing disaster resilience, primarily by pairing it with vulnerability. There are those who describe resilience and vulnerability as two sides of the same coin,[98] while others place resilience and vulnerability on opposite

94. DANIEL A. FARBER ET AL., DISASTER LAW AND POLICY 3 (2d ed. 2010); *see also* Pidot, *supra* note 56, at 215 ("These events are referred to as 'natural' disasters because they are precipitated by natural forces. But the behavior of humans—where we locate and how we build our homes, businesses, and roads—plays a leading role in transforming events into disasters.").

95. *Resilience Definition*, OXFORD ENGLISH DICTIONARY (2014).

96. Norris et al., *supra* note 84, at 127–28.

97. *Id.* at 127.

98. Manyena et al., *supra* note 85, at 418.

poles of the same continuum "with vulnerability being negative and resilience being positive."[99] In both illustrations, the assumption is made that when resilience is being addressed, vulnerability is also part of the conversation, as the presence of the one suggests the absence of the other.[100]

Like *resilience*, the definition of *vulnerability* varies with the speaker and audience; however, for the purpose of this discussion, it will suffice to turn first to the OED, which defines *vulnerability* as "the quality or state of being vulnerable"[101] and *vulnerable* as "that may be wounded; susceptible of receiving wounds or physical injury."[102] In the context of disaster policy:

> Vulnerability is the pre-event, inherent characteristics or qualities of systems that create the potential for harm or differential ability to recover following an event. Vulnerability is a function of the exposure (who or what is at risk) and the sensitivity of the system (the degree to which people and places can be harmed).[103]

B.E. Aguirre argues that vulnerability is synonymous with "exhaustion, impotence, weakness, or exposure to harm."[104]

Aguirre posits that vulnerability and resilience are neither complementary nor dichotomous, but are dialectical in nature.[105] According to Aguirre, "[b]oth vulnerabilities and resilience are temporary and incomplete elements of a permanent social change process which impacts on the adaptability of such systems and which can be conceptualized using a dialectical logic of transformation."[106] Following the Hegelian theory of dialectics, a thesis—here vulnerability—is presented and answered by its antithesis—resilience—resulting in a synthesis or a solution to the problem. However, once a synthesis is formed, it becomes the new thesis, exposing new vulnerabilities that must be answered. While the

99. *Id.*

100. *Id. See also* B. E. Aguirre, *Dialectics of Vulnerability and Resilience*, 14 GEO. J. ON POVERTY L. & POL'Y 39, 39 (2007) ("[A]s in the case of the relationship between trust and control . . . , 'each assume the existence of the other, refer to each other and create each other, but remain irreducible to each other.'").

101. *Vulnerability Definition*, OXFORD ENGLISH DICTIONARY (2014).

102. *Vulnerable Definition*, OXFORD ENGLISH DICTIONARY (2014).

103. CUTTER ET AL., *supra* note 87, at 2.

104. Aguirre, *supra* note 100, at 41–42.

105. *Id.* at 39.

106. *Id.* at 44.

obvious response to a vulnerable community or system is an effort to become more resilient, "[i]nherent in the very solution meant to bring about temporary adaptation is the creation of new and frequently unanticipated vulnerabilities, resulting in the need for new efforts at mitigation and resilience."[107] Perhaps the best illustration of the dialectic or at least the tension between resilience and vulnerability are the stories of communities thought to be resilient. In 2011, two earthquakes revealed that even a resilient community can be vulnerable.[108]

The first was the Christchurch earthquake in New Zealand in February 2011. New Zealand has a history of earthquakes, evident not just by the numbers of known earthquakes, but also by the inclusion of Ruaumoko, the god of earthquakes, in Maori mythology. New Zealand is considered one of the most earthquake resilient societies, with comprehensive earthquake preparation taught in schools and strict building code by-laws for earthquake-prone housing in place since 1935.[109] Despite its level of preparation, Christchurch was blindsided by a previously hidden and infrequently active fault.[110] When a 6.3 magnitude earthquake occurred directly underneath the city center, it shook more than the earth. The area was still recovering from a September 2010 earthquake and its aftershocks, resulting in greater damage than would normally be anticipated by an earthquake this size. The February 2011 quake was the second-deadliest earthquake in New Zealand's recorded history, killing 185 people. To protect the surviving population, city officials cordoned off the city center as a public exclusion zone from February 23, 2011, the day after the earthquake, to June 30, 2013, 859 days after the earthquake.[111] In the days following the

107. *Id.* at 43.

108. Crowley & Elliott, *supra* note 86, at 208.

109. *Id.* at 212.

110. *Id.* (A similar earthquake—one from a previously hidden fault line—but at a larger magnitude, 7, occurred in September 2010. Known as the Darfield earthquake, the "rupture broke the surface and laterally offset roads, hedges and fences by up to 4 m[eters]. However, this earthquake occurred 40 km to the west of Christchurch, and no deaths occurred in the city or outside.").

111. Sarah-Jane O'Connor, *Our Job Here is Done, Soldiers Say*, FAIRFAX NZ NEWS (June 28, 2013, 5:00 AM), http://www.stuff.co.nz/national/christchurch-earthquake/8851961/Our-job-here-is-done-soldiers-say.

earthquake, 50% of the buildings within the city center were designated for demolition,[112] leaving a gaping hole in the city center.

From the Christchurch earthquake come two important observations about resilient communities: Despite the earthquake's surprise location in the city center, Christchurch's designed resiliency to other, more distant earthquakes did help the city—although a large number of buildings were demolished, "the important thing was that they stood long enough for occupants to safely evacuate."[113] And while the number of deaths was startling to the New Zealand public, the fatality rate was 0.06% in an event "in which a third of a million [people] experienced severe shaking."[114] This statistic, however, leads to the second observation in the form of a question that was asked after the Christchurch earthquake: "But is this an acceptable risk for a resilient community"?[115]

The Christchurch community had been prepared to withstand an earthquake, but not one directly under the city. In this way, a resilient community became vulnerable, lacking the flexibility in some instances to consider, adapt to, or prepare for an unknown threat of disaster. In the months after the earthquake, Crowley and Elliott wondered "if by creating a resilient community you produce an incapacity for accepting even a small degree of risk, then how can that community understand and accept the inherent uncertainties of earthquakes?"[116] This question directs our attention back to the nature of the resiliency-vulnerability dialectic. It requires a constant conversation between thesis (vulnerabilities) and antithesis (resilience) to create what we consider a resilient community. If the conversation stops once a community believes itself to be resilient, the community becomes vulnerable by not continuing to improve or consider new possibilities.

Four years later, the narrative of the Christchurch earthquake is divided between those who stayed and continued to be a resilient community, and those who could not overcome the newly discovered vulnerabilities.[117] According to the 2013 census,

112. Crowley & Elliott, *supra* note 86, at 212.

113. *Id.* at 213.

114. *Id.*

115. *Id.*

116. *Id.*

117. Alison Prato, *Earthquake-induced PTSD: What Life is Like Now in Christchurch, New Zealand,* TED BLOG (Nov. 21, 2013), http://blog.ted.com/2013/11/21/earthquake-

approximately 7,000 residents left Christchurch following the earthquake.[118] While only a fraction of the approximately 376,700 living in Christchurch before the earthquake, there is still a concern that a younger generation is leaving, while the population over the age of 50 is increasing.[119] Those who stayed watched the government demolish, rather than improve, buildings that had been damaged in the city center.[120]

Three weeks after the Christchurch earthquake, the second significant earthquake of 2011 occurred in Japan, another area known for its seismic resilience. "[N]ow listed as the fourth largest earthquake to be recorded globally in over a century," the Tohoku earthquake killed over 20,000 people and "generated a tsunami that tore across the flat plains of eastern Japan devastating thousands of communities."[121] Japan's resilience can be seen in its response to the earthquake,[122] as well as in strict building codes, well-rehearsed emergency drills, and a society prepared to experience earthquakes.[123]

In becoming resilient to earthquakes, however, Japan had made itself vulnerable in other ways. Most buildings were built from flexible materials and were single story, designed to move with and withstand an earthquake; that same design made the structures vulnerable to the extreme waves of the tsunami.[124] A second vulnerability was exposed at Fukushima, when the "earthquake and tsunami damage destabilised [sic] the operation of a complex of nuclear reactors, leading to partial meltdown and the release of radioactive material. The impacts of both events then hampered attempts to bring the nuclear risks under control due to the loss of

induced-ptsd-what-life-is-like-now-in-christchurch-new-zealand/?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+TEDBlog+%28 TEDBlog%29 ("In the aftermath of the quake, the people of Christchurch went two different ways. Some came together, while others fell apart.").

118. *Id.*

119. *Christchurch's Population Loss Slows*, SCOOP INDEP. NEWS (Oct. 23, 2012, 11:11 AM), http://www.scoop.co.nz/stories/AK1210/S00598/christchurchs-population-loss-slows.htm.

120. Prato, *supra* note 117.

121. Crowley & Elliott, *supra* note 86, at 213.

122. *Id.* ("Within 8 seconds of the first earthquake waves arriving, warnings were issued across the country and 27 high-speed 'bullet' trains were stopped without a single derailment.").

123. *Id.*

124. Tweed & Walker, *supra* note 82, at 939.

power and transport infrastructure."[125] The nuclear risks in turn impeded the rescue and recovery efforts in response to the initial threats of the earthquake and tsunami.

The 2011 Christchurch and Tohoku earthquakes show that a disaster resilient community can still be vulnerable, and those vulnerabilities may require new ways of conceptualizing resiliency.[126] It should be an ongoing dialogue, where "the ability to live with hazards requires a level of acceptable risk and crucially an understanding of the uncertainties related to hazards."[127] Ultimately, vulnerability is not a complement to resilience, but part of the process in developing resilience, exposed in the terms of the metaphor by how the community is not resilient.[128] As Aguirre states:

> Resilience is partly a recursive function of conscious awareness, planning, and training that anticipates or responds to the presence of vulnerabilities and tries to mitigate and provide solutions to them. These are all dimensions of resilient systems. Resilient actions do not merely reflect the capacity of systems to reconstitute themselves as they existed prior to the crisis, but show a system's ability to absorb, respond, recover, and reorganize from an internally or externally induced set of demands which reveal the presence of vulnerability and bring about mitigation efforts.[129]

In revealing the presence of vulnerability, however, governments and communities are required to determine "who or what is to be made resilient" and just how that will be

125. *Id.* at 938.

126. *See* Aguirre, *supra* note 100, at 43 ("Past experiences cannot be used as the only source of information to anticipate new risks. Imagination, creativity, and careful historical reconstructions of past disastrous events, including both cross national and international scientific assessments of major crises and disasters, are needed to attempt to anticipate and prevent new risks' effects.").

127. Crowley & Elliott, *supra* note 86, at 214.

128. *See, e.g.*, Anita Chandra et al., *Getting Actionable About Community Resilience: The Los Angeles County Community Disaster Resilience Project*, 103 AM. J. OF PUB. HEALTH 1181, 1182 (2013) (defining resilience in the context of public health emergency preparedness as "[t]he ongoing and developing capacity of the community *to account for its vulnerabilities* and develop capabilities that aid in: preventing , withstanding, and mitigating the stress of an incident; recovering in a way that restores the community to self-sufficiency and at least the same level of health and social functioning as before the incident; and using knowledge from the response to strengthen the community's ability to withstand the next incident") (emphasis added).

129. Aguirre, *supra* note 100, at 43.

accomplished.[130] For example, one response in Japan to the danger of tsunamis and the possible failure of sea walls would be to build on higher ground; this measure to establish resiliency, however, would expose a new vulnerability—the risk of landslides generated by typhoon rainfall—"replacing resilience to one form of risk with vulnerability to another."[131]

VI. CONCLUSION

Before the metaphor of resilience was applied to disaster policy, it was introduced in urban development and planning in the form of the "resilient city."[132] Surveying the history of cities, between 1100 and 1800,

> only forty-two cities worldwide were permanently abandoned following destruction . . . . By contrast, cities such as Baghdad, Moscow, Aleppo, Mexico City, and Budapest lost between 60 and 90 percent of their populations due to wars during this period, yet they were rebuilt and eventually rebounded. After about 1800, such resilience became a nearly universal fact of urban settlement around the globe.[133]

In spite of both natural and man-made disasters—or perhaps because of—it is "exceedingly rare for a major city to be truly or permanently lost."[134]

Resilience is more than policy—it is a fact of life. Recovery after disaster will happen, whether that means rising from the ashes or fighting against Mother Nature. Instead of *What happens next?*, the question becomes *How will what happens next happen?* Both the federal government and New York City are attempting to answer that question after Hurricane Sandy through rebuilding plans

130. Tweed & Walker, *supra* note 82, at 940.

> Knowing that there is an array of potential hazard interactions in a particular place may call for effective multi-hazard governance, but the difficulties involved in building resilience are highlighted through the choices that have to be made—who or what is to be made resilient and by what approaches or sets of methods?

131. *Id.*

132. Lawrence J. Vale & Thomas J. Campanella, *Introduction: The Cities Rise Again*, *in* THE RESILIENT CITY: HOW MODERN CITIES RECOVER FROM DISASTER (Lawrence J. Vale & Thomas J. Campanella eds., 2005).

133. *Id.* at 3.

134. *Id.* at 5.

emphasizing resilience; but if we only give resilience the strength of a dictionary definition, the power of perception earned through metaphor is lost. The metaphor of resilience shows us what is possible; the action of springing back, elasticity, or the ability to recover quickly as applied to recovery from natural disasters is a starting point but not an ending. Looking at resilience as a metaphor, rather than a definition, allows us to also see our vulnerabilities, to recognize what is not resilient. It reveals how recovery must be different from the concrete idea that is resilience. Where resilience returns a material to its original position, we must recognize that after a disaster, the rebuilding process inevitably creates something new.[135]

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135. *See* Rozario, *supra* note 32, at 42–43 (Despite having rebuilt the city as it was before the 1906 earthquake, at least one San Francisco resident felt that "[t]he old San Francisco is dead . . . . It may rebuild; it probably will; but those who have known that peculiar city by the Golden Gate and have caught its flavor of the Arabian Nights feel that it can never be the same. When it rises out of its ashes it will probably resemble other modern cities and have lost its old strange flavor.") (internal quotation marks omitted).

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