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Distributed preparedness: the spatial logic of domestic security in the United States

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Abstract. This paper examines the genealogy of domestic security in the United States through an analysis of post-World War II civil defense. Specifically, we describe the development of an organizational framework and set of techniques for approaching security threats that we call 'distributed preparedness'. Distributed preparedness was initially articulated in civil defense programs in the early stages of the Cold War, when US government planners began to conceptualize the nation as a possible target of nuclear attack. These planners assumed that the enemy would focus its attacks on urban and industrial centers that were essential to US war-fighting capability. Distributed preparedness provided techniques for mapping national space as a field of potential targets, and grafted this map of vulnerabilities onto the structure of territorial administration in the United States. It presented a new model of coordinated planning for catastrophic threats, one that sought to limit federal intervention in local life and to preserve the characteristic features of American federalism. Over the course of the Cold War, distributed preparedness extended to new domains, and following 9/11 it has moved to the center of security discussions in the US.

> "Disaster response in America traditionally has been handled by State and local governments, with the Federal government playing a supporting role. Limits on the Federal government's role in disaster response are deeply rooted in American tradition. State and local governments—who know the unique requirements of their citizens and geography and are best positioned to respond to incidents in their own jurisdictions—will always play a large role in disaster response. The Federal government's supporting role respects these practical points and the sovereignty of the States as well as the power of governors to direct activities and coordinate efforts within their States."
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> *The Federal Response to Hurricane Katrina: Lessons Learned*
> The White House (2006)

Introduction

Events such as the attacks of September 11, 2001 and Hurricane Katrina have raised basic questions concerning the spatial logic of domestic security in the United States: How should the government respond to a complex field of threats—such as natural disasters, terrorism, and pandemic disease—across national space? And what are the obligations of the government to individuals and communities in anticipating and responding to potentially catastrophic events?

In its *Lessons Learned* report on Hurricane Katrina, released in early 2006, the White House situated these questions in what it called an 'American tradition' of disaster response. In this paper we critically examine this American tradition by tracing the historical emergence of an organizational framework and set of practices for approaching emergencies that we call 'distributed preparedness'. Distributed preparedness provides

techniques for mapping national space as a field of vulnerabilities, and grafts this map onto the structure of territorial administration in the US.

Distributed preparedness was initially articulated in civil defense programs in the early stages of the Cold War, when US government planners began to conceptualize the nation as a possible target of nuclear attack. Over the course of the post-World War II period, distributed preparedness was extended to new domains, and since 9/11 it has moved to the center of security discussions in the US. But, contrary to the implication of the White House's *Lessons Learned* report, it hardly constitutes a stable paradigm or 'tradition'. Rather, distributed preparedness is best seen as an abstract schema whose concrete implementation has been continually fraught with internal tension.

Such tension was evident in the failed government response to Hurricane Katrina. In the wake of the event, city, state, and federal officials accused one another of incompetence and negligence, revealing stark disagreement about the distribution of responsibility for disaster response. Critics pointed out that the lead federal agency in emergency management—the Department of Homeland Security (DHS)—had been focused on preventing terrorist attacks rather than on natural disaster preparedness. Moreover, there were controversies over the role of the military in such emergencies: in the absence of adequate civilian response capacity, military units were deployed after the hurricane to provide basic logistics and security, raising questions about the proper relationship between civilian and military authority. To understand why the disaster provoked these controversies, it is necessary to explore the historical formation of distributed preparedness as a distinctive way of approaching security problems.

From civil defense to homeland security

The paper begins by placing the emergence of distributed preparedness in the broader context of civil defense planning and post-WWII national security strategy. With the rise of strategic bombing and total war, planners increasingly viewed the cities, industry, and population of the US as possible targets of nuclear attack. Civil defense was organized to ensure that, if attacked, the nation could organize military response. In this sense, distributed preparedness was one part of the continual mobilization for war that characterized the Cold War national security state.

The discussion that follows focuses on two dimensions of distributed preparedness that were initially developed in the context of civil defense planning, but which have had enduring importance beyond this context. We call these 'emergency federalism' and 'vulnerability mapping' (figure 1). Emergency federalism is an organizational framework for coordinating the activity of local, state, and federal governments through joint planning during normal times and unified command in the case of emergencies. As such, emergency federalism can be understood as a 'state spatial form', in Brenner's sense—that is, a way to "integrate state institutions and policy regimes across geographical scales and among different locales within the state's territory" (2004, page 91). Vulnerability mapping, meanwhile, refers to a set of techniques and procedures for mapping urban areas as sites of potential catastrophe. Its aim is to assess weaknesses in response capacities, and to guide the development of mitigation measures. In combining these two elements, distributed preparedness grafts a spatial understanding of vulnerability onto the federal structure of the US, creating a distinctive approach to the identification and management of perceived threats to collective life.

Our discussion is based on an analysis of some of the key documents in which distributed preparedness was initially articulated. We focus, in particular, on two of these: first, the 1950 report *United States Civil Defense* (*USCD*)—the so-called

Figure 1. The elements of distributed preparedness.

Emergency federalism: An organizational framework for coordinating local, state, and federal governments through joint planning and emergency response.	*Mutual aid*: a form of 'horizontal' coordination through which adjacent communities are organized collectively in the event of an attack.
	Mobile support: a vertically organized emergency standby capacity provided by 'self-contained services or teams' that provide specialized aid in areas such as rescue, first aid, emergency feeding, radiological and chemical defense, engineering, police, and fire services.
Vulnerability mapping: Techniques and procedures for mapping urban areas as sites of potential emergency.	*Map of 'pertinent' features*: a catalogue of features of the city that determine urban vulnerability. These features are juxtaposed on maps that are relevant to specific civil defense services.
	Target analysis: the identification of 'vulnerable nodes' in infrastructures that are likely targets of enemy attack.
	Damage assessment: the evaluation of the likely effects of a nuclear attack on specific urban features.

'blue book' that was the foundation for the 1951 Civil Defense Act (US Congress, 1981); and, second, a 1953 manual entitled *Civil Defense Urban Analysis* (*CDUA*), produced by the Federal Civil Defense Administration (FCDA). In examining these technical documents, our aim is not to assess the extent to which civil defense plans were implemented. In fact, a number of studies on US civil defense have shown that there were substantial limitations to such implementation (Blanchard, 1986; Fehr, 1999; Grossman, 2001; Lee, 2001; Tyler, 1967). Rather, our goal is to characterize distributed preparedness as a distinctive way of approaching security threats, and to consider its implications for contemporary discussions of security.[1]

In the context of the Cold War, distributed preparedness was a response to the exigency of nuclear confrontation with the Soviet Union. But both the specific techniques developed in civil defense planning and the overall schema of distributed preparedness have since migrated to other institutional contexts where they have been deployed to address threats other than nuclear attack: the Federal Emergency Management Agency (FEMA) and the rise of 'all-hazards planning' for disaster response in the 1970s; planning for pandemic disease by local, state, and federal public health agencies; and, most recently, the DHS—in which terrorist attacks have been added to the list of potential catastrophes that are to be managed through distributed preparedness.

The norms, techniques, and practices of distributed preparedness tend to fall below the radar of much critical scholarship on security. This is at least in part because they are ubiquitous and mostly taken for granted—they hold the status of an unexamined common sense. But this common sense is based on a historically situated logic of security, one that involves a distinctive way of imagining threats and vulnerabilities and of preparing for and responding to a certain category of events.

[1] Foucault refers to this approach as a study of problematizations. For a discussion of Foucault's position see Rabinow (2003). For a discussion of this approach in relation to security problems see Collier et al (2004).

The task of this paper, then, is to help understand how this logic *became* common sense; how experts, politicians, pundits, and journalists learned to think and speak in a certain way about security problems; and how a diverse range of possible events—natural disasters, pandemic diseases, terrorist attacks—came to be seen as part of the same class of security threats and as manageable through the same set of techniques.

Distributed preparedness, civil defense, and national security

The articulation of distributed preparedness in Cold War civil defense planning came in response to a series of political and technological developments that transformed strategic thinking about warfare in the US and Europe over the first half of the 20th century. The rise of total war meant that the entire industrial capacity of a country was regarded as critical to its war effort, thus turning vital industrial facilities into potential military targets. Meanwhile, the increasing centrality of airpower meant that this expanded range of military targets could be directly and suddenly attacked. And, with the dawn of the nuclear age, the impact of a surprise air attack would be catastrophic.

Total war led to a transformation in military strategy that was exemplified by the emergence of 'strategic bombing'. Strategic bombing was articulated in US Air Force doctrine before WWII and was put into practice by the US and Britain in the air war in Germany and Japan.[2] Strategic bombing did not focus on 'theater operations'—that is, attacks on enemy deployments. Rather, it targeted facilities that were crucial to an enemy's capacity to conduct industrial warfare. In particular, strategic bombing focused on the critical vulnerabilities of industrial production chains—the "vital links that if targeted would bring the system to a halt" (McMullen, 2001, page 8).

Post-WWII civil defense efforts were, in some sense, the defensive counterpart of strategic bombing doctrine. US strategists began to see national territory from the vantage of an enemy in a total war—as a space of potential targets.[3] The issue was how, in an air-nuclear age, to organize the home front to prepare for nuclear attack.

The basic argument for establishing a comprehensive, national civil defense program was made in the United States Strategic Bombing Survey, a massive effort to assess bomb damage in Japan, Germany, and Britain, conducted in the immediate aftermath of WWII (United States Strategic Bombing Survey, 1947).[4] In the course of investigating bomb damage, the survey also examined the civil defense efforts of these countries. It found that civil defense could be an important tool in mitigating the effects of urban bombing campaigns and in maintaining an ongoing capacity to wage war in the face of attack.

Based on these findings, the Strategic Bombing Survey concluded that a concerted national effort at civil defense planning was necessary. This conclusion was echoed in a series of subsequent reports that more or less repeated the broad recommendations of the Survey, and that began to elaborate a systematic approach to civil defense planning in the US.[5] The planning process culminated in a 1950 report entitled *United States Civil Defense* (US NSRB, 1950). This was a pivotal document that laid the groundwork

[2] For a discussion see McMullen (2001); for a broader analysis of military preparations for postwar mobilization during WWII, see Sherry (1977).

[3] This 'strategic mirroring' can be traced to the 1930s and to the approach of thinkers in the Air Force Tactical School (Collier and Lakoff, 2007). In the post-WWII period, civil defense was not the only response to this new awareness of the US as a target. For example, policies to promote industrial dispersion were also implemented (Galison, 2001; Light, 2003).

[4] McMullen discusses the relationship of the United States Strategic Bombing Survey to the transformation in US Air Force doctrine.

[5] For a review of these studies, see Lee (2001, chapter 2).

for the 1951 Civil Defense Act—which in turn created the FCDA—and it remained a basic reference for civil defense planners in the years that followed.[6] More broadly, the document laid out a new model that would subsequently be adopted in a range of other contexts for managing 'emergency' situations.

USCD was produced by the National Security Resources Board (NSRB), which had been created, along with the National Security Council, in the defense reorganization of 1947. The purpose of these organizations was to align the work of nonmilitary agencies in the government with the demands of an emerging concept of 'national security'. This concept of national security increasingly oriented both military and nonmilitary agencies in the government to ongoing war mobilization, in order to defend against what was perceived as a broad external threat to national existence.[7]

The approach articulated in *USCD* was firmly situated in this emerging national security doctrine. Civil defense, it argued, was "a missing element in our system of national security" in an air-nuclear age in which the United States was vulnerable to "a sudden devastating attack" (US NSRB, 1950, page 5). The document justified civil defense measures in terms of overall military objectives. "The outcome of two world wars", it noted, "has been decided by the weight of American industrial production in support of a determined fighting force. In any future war, it is probable that an enemy would attempt at the outset to destroy or cripple the production capacity of the United States and to carry direct attack against civilian communities to disrupt support of the war effort" (page 8).

Following the assumptions of strategic bombing doctrine, the report presumed that an attack would successfully strike critical targets in the US. The issue, then, was whether such an attack "would succeed in destroying America's productive power" (page 5). The enemy's 'success', in turn, "would depend in the main on the organization and functional efficiency of the country's civil defense" (page 5). These general assumptions pointed to a series of practical questions: how should planners conceptualize the US as a target space? What kinds of preparations would be appropriate to meeting this threat? And who should be responsible for organizing these efforts?

The answer to these questions, as laid out in *USCD* and a range of other planning documents, was the schema for coordinated planning and response that we call 'distributed preparedness'. By 'distributed', we mean that responsibility was delegated to different levels of government and to both public and private agencies, according to their competencies and capacities and according to their spatial relationship to a critical target. By 'preparedness', we indicate a form of planning for unpredictable but potentially catastrophic events. The aim of such planning is not to prevent these events from happening, but rather to manage their consequences (Collier and Lakoff, 2006; Lakoff, 2007).

In the context of civil defense, many of the details of distributed preparedness were specific to the exigencies of nuclear confrontation—such as the techniques for envisioning the impact of a nuclear strike on a city, which we describe below. But the broader schema of distributed preparedness migrated to new domains, and shaped governmental response to a growing range of threats. The discussion that follows

[6] Lee (2001, page 60) argues that *USCD*—referred to as the 'blue book'—served "as the blueprint for structuring the Federal Civil Defense administration."

[7] Hogan (1998, page 210) writes that the NSRB was to provide "a peacetime agency to coordinate mobilization plans across the government, assess military readiness and the availability of essential commodities, and advise the president on strategic resources and the proper balance between civilian and military requirements."

examines two elements of this schema: *emergency federalism* and *vulnerability mapping*. Emergency federalism was developed as an organizational framework for coordinated planning and response among autonomous local governments and private actors in the United States' system of distributed sovereignty. Vulnerability mapping involved techniques for identifying likely targets of an enemy nuclear attack, and assessing the impact of nuclear blasts.

Emergency federalism: autonomy, economy and coordination

The question of who would take responsibility for civil defense planning in the postwar US was initially a contentious one. The military, which had been involved in civil defense preparations during and immediately after the war, consistently opposed adding civil defense functions to its basic responsibilities. By the late 1940s there was a broad consensus that civil defense planning should be a civilian endeavor (see the discussion in Lee, 2001, chapter 2). But the prospect of civilian administration raised a number of problems that reflected broader tensions in the postwar US about the growth of the federal government.[8]

The New Deal had dramatically expanded the scope of federal intervention into the social and economic life of the national population. The new federal prerogatives were opposed by conservatives committed to principles of self-reliance and local government as fundamental characteristics of the American political system. These tensions continued to shape debates about social and economic policy during and after WWII. As Hogan (1998) has shown in a detailed political history of the period, Truman and many liberal Democrats assumed that declining military expenditures would allow increases in social welfare programs, including a national health service. Conservative Republicans, who opposed expanded social programs and a larger central government, agreed that military expenditures should decline, but thought that the peace dividend should pay for tax cuts.

The political divisions that formed around the conflicting priorities of social welfare and tax cuts were reframed by the international crises of the late 1940s, including the Soviet atomic bomb test and developments in Korea. These events pushed political opinion toward an emerging consensus around a 'national security state', and, consequently, around a dramatic expansion of military expenditures to maintain continual mobilization and war preparedness in the face of the Soviet threat (Hogan, 1998; Yergin, 1977).

This national security consensus required concession on both sides, although within a framework that allowed each to hold to some core beliefs (Gold, 1977; Hogan, 1998; Waddell, 1999). Conservatives made concessions to an enlarged federal government, in part on the condition that the basis of its growth would not be welfare programs or intervention in the economy, but, rather, military-related spending. Liberals, meanwhile, yielded in their aspirations for bold new social welfare programs, in part on the understanding that military spending would act as an economic stimulus, and, thus, an instrument for positive government economic policy. What emerged was a model of 'Cold War liberalism'. It was based on what Gold (1977) has called a "military – Keynesian consensus", realized by "pushing Keynesianism toward an emphasis on economic growth and making growth itself dependent upon the military

[8] Similar tensions can be traced back to World War I, when increased government interventions in the economy provoked tensions concerning the relationship of the state to the system of free enterprise. The structure of the WWI War Industries Board was, in part, a response to these tensions. For a discussion see Cuff (1973).

and private production, not on social spending."[9] As Hogan (1998) puts the point, the broad shift was decisively away from a 'welfare' state toward a 'warfare' state, though one that, through interventions in aggregate demand, did play a role in promoting economic growth.

In the context of this early Cold War liberal consensus, civil defense was in an awkward position. On the one hand, it was considered by many to be crucial to national security. On the other hand, in contrast to military buildup, civil defense implied state intervention into areas of domestic policy such as welfare, public health, local police, and fire services that conservatives wanted to defend against incursions by the federal government. Moreover, a national program of civil defense might limit the independence of state governments, local governments, and industrial plants—all of which had to be involved in civil defense planning. The prospect of a national civil defense program, therefore, raised questions about the basic terms of the Cold War liberal consensus: about the autonomy of local governments and individuals, about federal intrusion in the organization of collective life, and about the expansion of government budgets required to implement civil defense programs.[10]

These political questions were directly related to central issues about the organization of civil defense. As the United States Strategic Bombing Survey had found, civil defense worked well in cases where there were both principles of local 'self-protection' and clear hierarchical command and control. Thus, on the one hand, the survey noted that, in German civil defense,

> "The individual was trained to take care of himself, protect his property, and join with a few others in a small group under a warden to help others to do likewise when the task was too great for them to bear alone. This training of the individual in self-protection and the feeling of confidence he had that all would be done that could be done kept alive a strong spirit in civilian defense forces which, in no small measure, was responsible for the fact that the home front did not collapse" (United States Strategic Bombing Survey, 1947, page 13).

At the same time, the survey noted that "The control exercised by the German regular police from the national level through the local level made for simplicity of control and command. The emergency created by war in civilian communities requires concentration of authority" (1947, page 13). But what organization in the US governmental structure could provide self-protection and centralized control simultaneously? And how could this combination of self-protection and centralized control be reconciled with the distributed sovereignties of US federalism, or with concerns about the expansion of federal spending and federal bureaucracies?

USCD explicitly acknowledged these fiscal and political issues at the outset. The report noted that, given the drain on resources due to the expansion of the military that had accelerated in 1949, plans for civil defense had to be made "with full recognition of the importance of maximum economy in the use of the available supply of men, money, and materials" (page 3). Likewise, the report emphasized the need to avoid infringing upon the sovereignties of states, localities, families, and individuals.

[9] This coalition also involved corporate actors who had been concerned with state incursions on free enterprise during WWII. Waddell (1999, page 241) writes that "The experience of war mobilization convinced key corporate leaders to value the compensatory role played by the state and to appreciate a national state apparatus tamed by the wartime influx of corporate executives. They welcomed a new era of growth based on a business-oriented Keynesianism in preference to both a mythic laissez-faire and a social Keynesianism rooted in a redistributive welfare state."

[10] These concerns were raised in discussions of civil defense. Thus, Lee (2001, page 37) notes that "Certainly, there were some who reacted with dismay over the prospect of an intrusive civil defense program. Not surprisingly, others objected for economic reasons."

And it repeatedly noted that local governments were in a better position than the federal government to respond to local problems: "the States are established with inherent powers and accompanying responsibility, and have clear qualifications to coordinate civil-defense operations within their boundaries, and in emergency to direct them. Similarly, the cities, countries, and towns are best qualified to handle their own operating functions" (page 5).

Civil defense planners addressed these tensions between centralization and decentralization, between the collective demand for organizing for civil defense and the presumptive priority given to local sovereignties, by formulating an organizational framework that we call 'emergency federalism'. Emergency federalism recognized that preparation for enemy attack on critical civilian targets was a problem of national security, and, therefore, related to the core functions of the federal government. But it sought to minimize, to the extent possible, direct federal intervention—and to limit the financial impact of civil defense planning—by distributing civil defense functions among a range of public and private actors, and by devising systems for coordinated planning and response in the event of an emergency.[11]

According to *USCD*, the basic principle for the distribution of responsibility in emergency federalism was self-protection. Civil defense, the report held, was first of all incumbent upon individuals and families, and upon the governmental institutions that were closest to the individual and the community (US NSRB, 1950, page 4). The key actors in civil defense would not, thus, be members of a new bureaucracy of federal officials. Rather, they would be local fire and police services, local health agencies, and local government officials, who would incorporate civil defense planning into their routine activities. "Civil defense rests", the report argued,

> "upon the principle of self-protection by the individual, extended to include mutual self-protection on the part of groups and communities. Manned largely by unpaid part-time volunteer workers, each service of civil defense will work in cooperation with the others for the common good. All men and women who make up these services will belong to a national team—The United States Civil Defense Corps" (page 3).

The argument for emergency federalism in *USCD* then proceeded in the classical style of liberal political thought. Having begun from the individual and local government as the basic bearer of rights and responsibilities, the report proceeded to ask in what cases it would be justified to qualify the right to self-government and the burden of self-protection through intervention by states and by the federal government. For example, the report argued that some situations would overwhelm the capacity of individuals or families to provide themselves with adequate sustenance (a function that was notably not considered a normal responsibility of the state):

> "Under wartime disaster conditions, many self-sustaining families and individuals may suddenly find that they have to depend temporarily on others for even the simplest essentials of life. After a disaster, a family may be left on the street without housing or adequate clothing, with no place to eat, wash, or sleep, with no means of transportation and perhaps without money or the ability to care for immediate needs" (page 69).

Consequently, emergency welfare services were required to assist families in such situations, and were a necessary part of civil defense plans.

[11] This framework of emergency federalism was one among a number of efforts after WWII to reconcile a growing state sector with the institutions of US federalism. Another example is the fiscal federal theory of Buchanan (1949). Similar 'federalist' solutions to security problems were also being worked out in domains such as health surveillance (see Fearnley, 2005).

Likewise, communities and local governments would be unable to deal with the overwhelming devastation of a nuclear attack. "No community", the report maintained, "could afford the establishment of complete self-sufficiency" (page 45), nor would such self-sufficiency be practical, since "surplus resources unnecessary in peacetime would be vulnerable to destruction in event of attack" (page 45). For these reasons, the principle of local self-protection could be supplemented by a system of support from other governmental entities. Such a program would meet the demands of economy, "because it does not call for a tremendous procurement program, or an unusual drain on men, money, and materials. Instead, it provides for the organized use of existing equipment, following the principle that location is more important than quantity" (page 4).

USCD proposed two kinds of coordinated response that would bring aid to communities whose capacities were overwhelmed: 'mutual aid' and 'mobile response' (see figure 2). Mutual aid was defined as "voluntary arrangements by which the protective services of organized communities assist each other in time of need, usually on the basis of prior planning and voluntary contractual agreements between communities" (US NSRB, 1950, page 45). It was a form of 'horizontal' coordination through which adjacent communities would be organized collectively in the event of an attack. The report noted that many informal mutual aid agreements already existed. The task was to formalize these agreements and to develop mutual aid plans that could be "tested in practice" so that, in an emergency, "the mutual-aid forces [could] be established with precision and speed" (page 47).

Mobile support meanwhile was aid "directed by State authority into a stricken area" (page 45). It expressed not an obligation established by agreement between equals but an obligation of the government to protect individual citizens and communities. Mobile support was envisioned as a vertically organized emergency standby capacity provided by "self-contained services or teams" that would provide specialized aid in areas such as rescue, first aid, emergency feeding, radiological and chemical defense, engineering, police, and fire services (page 47). The primary responsibility for such mobile support was borne by state governments. But the report also postulated a role for the federal government.[12] State governments might request that the military provide "assistance where possible in the event of war-caused disasters" (page 16).

Overall, the report articulated a framework for coordinating emergency response that explicitly sought to uphold the federal principles of US constitutional government. During normal periods, planning would be conducted through cooperation among different agencies within the federal system. In the case of events that overwhelmed local capacities, however, unified structures of command and coordination would be established. This model for dealing with emergency situations did not involve the suspension of legality or civilian rule (although the report noted that there might be circumstances in which martial law would be declared after a

[12] Discussion of the federal role in the report was substantially broader than this question of mobile support. It focused on coordination, planning, and redistribution functions. First, the federal role was needed to ensure uniformity of equipment and to ensure that roughly standard procedures and assumptions were used for planning in various US target areas. Second, the federal role was necessitated by the concern to avoid burdening critical target areas. Thus, the federal government might have a redistributive role to play in aiding communities with a disproportionate civil defense burden. Third, the federal role was determined by the allocative problem of ensuring that minimum standards for civil defense preparation were reached in critical target areas, since, by definition, reaching such minimum standards for critical targets was a concern not merely of localities but of the national security of the country as a whole.

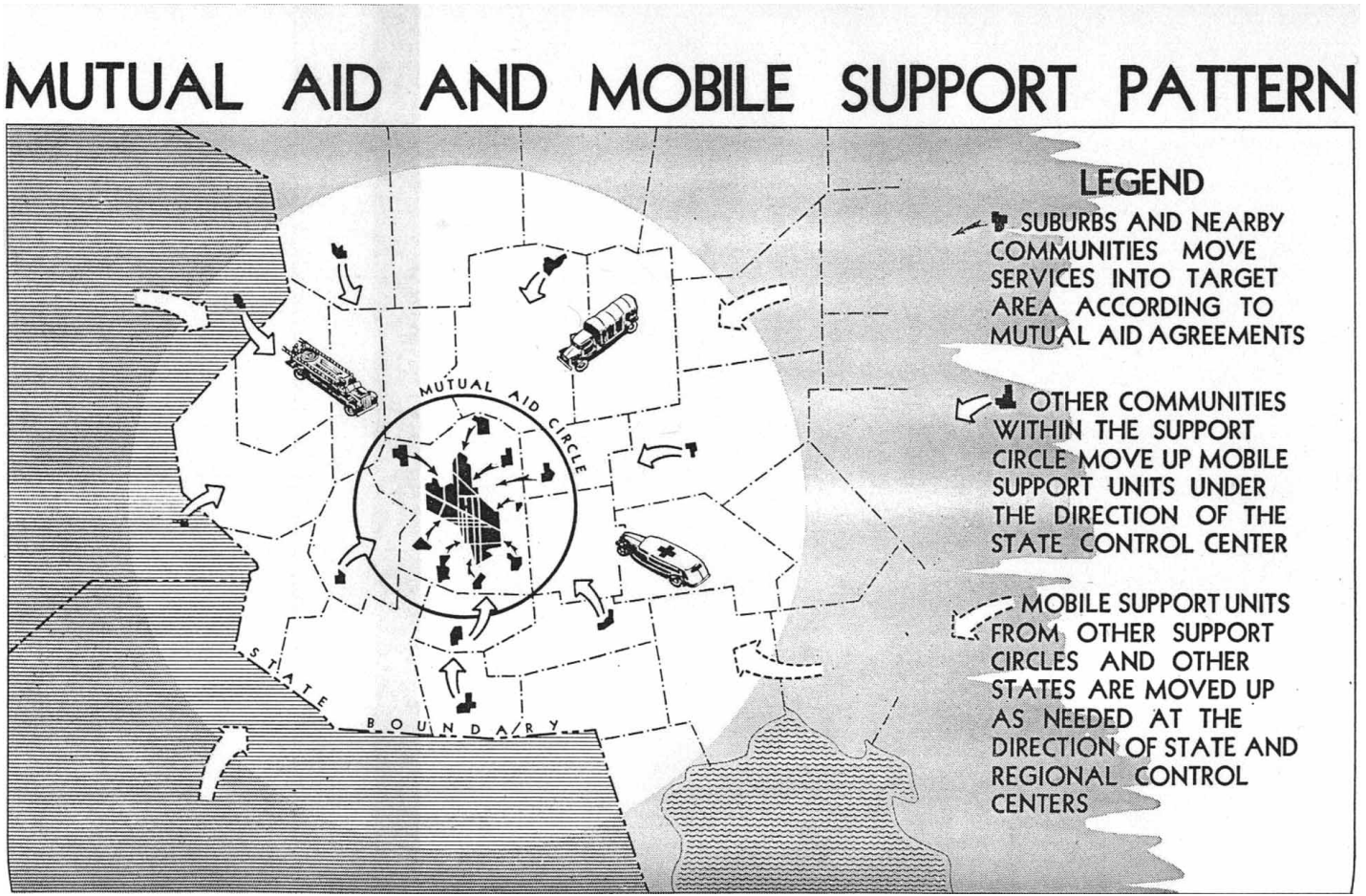

Figure 2. Mutual aid and mobile support (source: US NSRB, 1950, page 46).

nuclear attack).[13] Rather, it called for temporarily establishing a unified command to "meet the exigencies of a given situation" (Hopley quoted in Lee, 2001, page 49).[14]

But emergency federalism was only a formal administrative framework—one that lacked spatial and substantive form. It did not, as such, indicate where mutual aid would be necessary in the event of attack or what kinds of mobile support should be organized.

Vulnerability mapping: urban life under threat

In order for civil defense planners to apply the principles of emergency federalism to a given city, they had to know what response capacities would be required in the event of an attack. *USCD* and subsequent planning documents proposed a procedure for gathering such knowledge that we refer to as 'vulnerability mapping'. These planning documents gave technical instructions for producing maps that visually juxtaposed the projected impact of an attack with the specific features of an urban area. Such maps allowed planners to assess weaknesses in existing response capacities and to determine where resources would have to be directed to improve civil defense preparedness.

Imaginative enactment and urban analysis

Vulnerability mapping involved the development of a new form of knowledge about urban life. As opposed to archival knowledge about illnesses or accidents affecting the population, this form of knowledge was not concerned with the regular occurrence of events over time. Rather, vulnerability mapping used techniques of imaginative enactment to generate knowledge about events—such as a surprise nuclear attack—whose likelihood could not be known, but whose consequences could be catastrophic.

As described in *USCD*, the starting point in mapping urban vulnerability was to envision enemy strategy in a nuclear attack. Imagining the enemy mind-set was not, of course, a new problem. But, before the era of total war, anticipating the intentions of the enemy had been important mainly for planning theater operations—that is, force deployments and strategies of attack. In an era of strategic bombing, the question shifted: how did the enemy conceptualize the features of US territory as a set of targets?

USCD assumed that a potential attacker would plan an attack based on the same principles of strategic bombing that guided US Air Force doctrine. As the report put it: "The considerations which determine profitable targets are understood by potential enemies as well as our own planners. Such considerations include total population, density of population, concentration of important industries, location of communication and transportation centers, location of critical military facilities, and location of civil governments" (US NSRB, 1950, page 8).

Once a probable target of enemy attack had been identified, an attack scenario could then be imaginatively enacted in order to analyze its likely impact and the capacities that would be required for response.[15] As an illustration, *USCD* provided a "hypothetical attack problem" (see figure 3). The hypothetical attack problem was a

[13] Although the point cannot be developed here, this structure for approaching 'emergency' situations differs substantially from what is assumed in much contemporary literature on sovereignty and the 'state of exception'. Emergency federalism does not involve a sovereign exception to normal legality: indeed, avoiding such an exception is precisely the point of emergency federalism. The use of a Schmittian analytic of the 'state of exception' (see, for example, Agamben, 2005) thus misses much of what is important in current discussions of domestic security in the US.

[14] 'Unified' command is different from 'unitary' command in that the latter implies command and control relationships within a hierarchically organized bureaucratic structure, while the former implies only temporary concentration of decision making among entities not related to each other through bureaucratic hierarchy.

[15] These techniques of imaginative enactment and exercise were borrowed from military planners, who faced a similar challenge of anticipating—and preparing for—uncertain but potential catastrophic events (Lee, 2001).

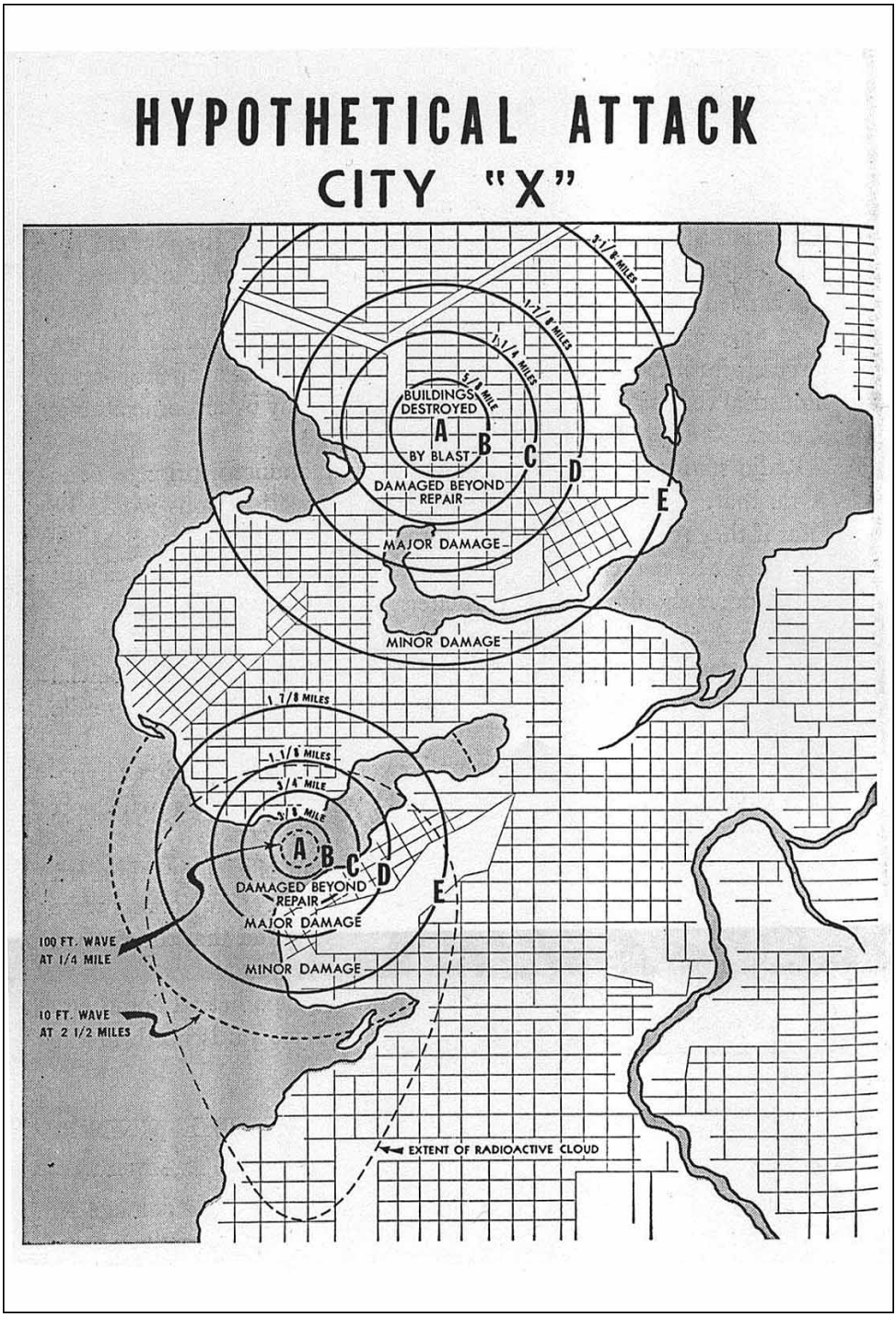

Figure 3. A hypothetical attack problem (source: US NSRB, 1950, page 119).

scenario developed through an 'attack narrative' (page 117). This narrative described two atomic detonations over an imaginary city '*x*': one an airburst at 2400 feet, and one an underwater burst. It then laid out the immediate impact of the attack: the water surge and lethal cloud of radioactive mist from the underwater burst; the explosive impact of the airburst and the flash fires that spread a mile from ground zero; the casualties, including 14 000 – 17 000 from 'mechanical injury' (that is, from the blast itself), 7000 – 8000 burn cases, and 1000 – 3000 cases of radiation sickness from the airburst. The attack narrative also included a description of the immediate damage that would be inflicted on communications, transportation, utilities, and medical facilities.

Such information was intended to give planners in civil defense related services—such as transportation planning, medical response, and so on—an understanding of the specific challenges they might face in the event of an attack. "The hypothetical attack problem", *USCD* instructed, "should be realistic in order to bring out planning requirements in all segments of civil defense operations. The planners should accept the assumed effects, and analyze their needs accordingly" (US NSRB, 1950, page 114). By enacting a possible future event, the hypothetical attack problem provided a kind of test that allowed the groups involved in civil defense planning to assess "the details of their plans drawn thus far, in accordance with the conditions stated in the attack hypothesis, so that each segment of the plan can be modified as needed in the light of the problem" (page 114).

The question then was: how would these practices be applied in a specific urban setting? A series of technical manuals published by the Federal Civil Defense Authority gave local officials detailed instructions on how, concretely, to engage in vulnerability mapping in a given city. Here we consider a 1953 manual entitled *Civil Defense Urban Analysis* (*CDUA*). This manual sought to help local planners develop flexible mapping tools for contingency planning. It showed planners how to produce a spatialized assessment of the impact of a nuclear attack, one that could be used by civil defense services to plan their response. The manual included a series of techniques that would continue to develop in ensuing years, such as cataloguing critical urban features and mapping system interdependency. Collectively, they constituted an evolving practice of spatial vulnerability assessment.

The manual exemplified a new understanding of urban existence as *under threat*—that is, as continually vulnerable to unexpected and potentially catastrophic events. Civil defense authorities saw that, in the era of total war, the very systems that had been developed to support modern urban life were now sources of vulnerability and, as such, likely targets of enemy attack. Health facilities, systems of transportation and communication, and urban hygiene systems—whose construction had been essential to modern social welfare provision—were now understood in a new light, as possible targets and as necessary aspects of any emergency response.[16]

In order to conduct an "urban analysis" it was initially necessary to catalogue the city's features. As the manual put it, "Since the primary purpose of a civil defense urban analysis is to provide the tools for undertaking realistic civil defense planning,

[16] Beck (1999) has argued that the proliferation of incalculable but potentially catastrophic threats is a central characteristic of the 'risk society'. He notes that these threats outstrip the insurantial mechanisms developed to manage collective security problems under the aegis of welfare, and suggests that the social consciousness of these new threats will lead to the mobilization of a new antitechnocratic politics. Beck's work raises a further question: namely, how do planners and strategists approach this new type of threat? For a discussion see Collier and Lakoff (2006) and Lakoff (2007).

all pertinent aspects of the city must be considered" (US FCDA, 1953, page 1).[17] The manual listed these "pertinent aspects" in a table of forty-seven 'urban features'. These features included patterns of land use, building density, industrial plants, population distribution, police stations, the water distribution system, the electric power system, streets and highways, streetcars, port facilities, the telephone system, hospitals, zoos, penal institutions, underground openings (caves and mines), topography, and prevailing winds (pages 66–77).

The table indicated relevant sources of information about these features and the specific details of each to be included in civil defense planning. It also pointed to the 'significance' of these features for specific areas of civil defense planning. Thus, for example, information about land use could help both in estimating possible damage to urban facilities and in mapping the distribution of population—which was crucial, as we will see below, to assessing likely casualties from a blast. Industrial plants were significant as possible targets of sabotage or bombing and as important elements in police and fire-control planning. Many features had a 'double' character: they were crucial both in gauging the impact of an attack and in analyzing the landscape of response. For example, water distribution systems were a potential target of sabotage and might be destroyed or disabled by a nuclear blast; they were also critical to fire-control plans and were needed for emergency provision for attack victims and civil defense workers. Likewise, streets and subways were potential targets, particularly at vulnerable points such as bridges and tunnels. At the same time, they served as routes for evacuation, mutual aid, and support; and subway stations could be used as bomb shelters.

Producing maps

After cataloguing these urban features, the next step for local civil defense planners was to develop maps for use by specific urban services in developing their own contingency plans. To make these maps, planners selected and spatially juxtaposed the features of the city that would be relevant to these services in the event of an attack. As the manual put it,

> "All related features needed for general civil defense planning operations or for use by one particular service (fire, police, etc) should, if practicable, be assembled on one map. The various features represented are dissimilar but are significant because of their interrelationship. For example, one particular street may be important as an emergency route because bordering buildings are not sufficiently high to block the street with rubble in event of their destruction by bomb blast" (US FCDA, 1953, page 8).

The production of these maps proceeded through three steps: (1) target analysis; (2) damage assessment; and (3) contingency planning.

The first step in producing vulnerability maps—the target analysis—was to determine where a rational enemy would target an attack in order to cause the most possible damage. To find this 'assumed aiming point', planners were instructed to place a transparent acetate overlay with regularly spaced concentric circles on top of a map of industrial facilities and population concentrations. Each circle marked a zone in which the impact of a blast would be felt with a common intensity. Damage from the blast in each zone could be estimated using information from a document that had been prepared by the Atomic Energy Commission and the Department of Defense, called *The Effects of Atomic Weapons* (Los Alamos Scientific Laboratory, 1950). This document, based on data gathered in Hiroshima and Nagasaki, provided tables indicating blast damage from a nuclear strike at various distances from ground zero.

[17] The text also points to the need for ongoing revision of such plans in relation to new needs: "because of constant changes in the various factors, results of civil defense urban analyses must be subjected to constant review and revision with civil defense plans being altered accordingly" (US FCDA, 1953, page 2).

By positioning the acetate overlay on top of different possible targets on the map, the planner could test out different aiming points to determine which would cause maximum destruction.

The point of identifying an assumed aiming point was not to predict the exact location of an attack. As the manual notes, the target was not precisely known, and, in any case, the enemy might miss. Rather, the goal was to determine the maximum possible damage from an attack to ensure that response plans were "sufficiently broad and flexible to meet all possible conditions" (US FCDA, 1953, page 8). Once the assumed aiming point was determined, it served as "a logical center for the pattern of civil defense ground organization of the community as a whole" (page 10).

The second step in developing vulnerability maps was to estimate the damage a given sized bomb, hitting a certain point, would inflict on significant urban features. These included not only the potential targets of enemy attack but also those features relevant to emergency response. *CDUA* divided significant urban features into two categories: facilities and population. In the case of facilities, the factors determining damage were the size of the blast itself and possible damage from an ensuing firestorm. Physical damage from the blast was estimated by using the acetate overlay method in combination with a table—provided in *CDUA*—that indicated the amount of damage to structures made from various materials in specific blast zones (see figure 4). Fire damage depended on such factors as building density, construction materials, precipitation, and wind velocity.[18]

To map the city's probable number and distribution of casualties, planners were instructed to represent the distribution of the population in the city at the time of attack on a map, based on estimates of daytime migration patters. This preparatory map could then be paired with a table (provided by the FCDA) of the estimated percentage of fatalities and nonfatal injuries in a zone. Using this table and the acetate overlay method, the planner would then "record the fatal casualties, nonfatal casualties and uninjured as calculated for each ring and for the various bomb sizes" (US FDCA, 1953, page 36). With this information, the planner could generate 'isorithms': concentric lines on a city map indicating the number of fatalities in a given sector. These maps represented urban populations as spatially distributed casualty figures, so that plans could be developed to provide relief in the wake of attack, such as emergency medical and housing services.

The third and final step in the mapmaking process was to juxtapose selected features on maps for the various services that would be engaged in response to an attack. *CDUA* noted that "Each service should be given a map of the overall defense pattern of the city... and an emergency street and highway map developed by the engineering services which shows the traffic control and evacuation assembly plan. In addition, each service should be furnished specific maps and information pertinent to their operations" (US FDCA, 1953, page 50).

These maps not only estimated the physical damage of a likely blast and the casualties that would result from it. More importantly, they also indicated the spatial distribution of physical damage and casualties over the existing structure of the city, providing information for civil defense services that would guide contingency planning. For example, information about damage to streets and highways, or general information about the spatial distribution of casualties, might be provided to engineering departments and "incorporated in the general civil defense transportation map" (page 53). Evacuation routes would thus be planned based on the likely volume of

[18] The key question was whether a blast would become a firestorm by spreading among neighboring buildings, which would increase structural damage considerably.

evacuees over certain routes. Planners could also determine areas where fallen buildings or trees might block exit routes and plan alternatives accordingly. Isorithmic maps of casualties, meanwhile, would show "at a glance where the people are in the city" and would be "especially valuable for estimating shelter needs and the probable distribution of casualties and uninjured – unhoused."[19] These maps would also identify critical vulnerabilities in systems of response. "For example", *CDUA* noted, "one police station may house all of the police broadcasting equipment and one electric station may have the only available transformer which can change voltage from a distant source of electrical power to the voltage used for distribution through the city" (US FCDA, 1953, page 12).

TABLE I.—Continued

Radii and areas of concentric zones of A-, B-, C-, and D-damage

Bomb size	Zone of A-damage		Zone of B-damage		Zone of C-damage		Zone of D-damage	
	Radii (miles)	Areas (square miles)	Radii (miles)	Areas (square miles)	Radii (miles)	Areas (square miles)	Radii (miles)	Areas (square miles)
1(X)	0. 0 to 0. 5	0. 8	0. 5 to 1. 0	2. 3	1. 0 to 1. 5	3. 9	1. 5 to 2. 0	5. 5
2(X)	0. 0 to 0. 6	1. 3	0. 6 to 1. 3	3. 8	1. 3 to 2. 0	6. 2	2. 0 to 2. 5	8. 7
2½(X)	0. 0 to 0. 7	1. 5	0. 7 to 1. 4	4. 2	1. 4 to 2. 0	7. 1	2. 0 to 2. 7	10. 1
3(X)	0. 0 to 0. 7	1. 6	0. 7 to 1. 4	4. 9	1. 4 to 2. 2	8. 1	2. 2 to 2. 9	11. 4
4(X)	0. 0 to 0. 8	2. 0	0. 8 to 1. 6	6. 0	1. 6 to 2. 4	10. 0	2. 4 to 3. 2	14. 0
5(X)	0. 0 to 0. 9	2. 3	0. 9 to 1. 7	6. 9	1. 7 to 2. 6	11. 5	2. 6 to 3. 4	16. 1
6(X)	0. 0 to 0. 9	2. 6	0. 9 to 1. 8	7. 8	1. 8 to 2. 7	13. 0	2. 7 to 3. 6	18. 2
7(X)	0. 0 to 1. 0	2. 9	1. 0 to 1. 9	8. 6	1. 9 to 2. 9	14. 4	2. 9 to 3. 8	19. 4
8(X)	0. 0 to 1. 0	3. 1	1. 0 to 2. 0	9. 4	2. 0 to 3. 0	15. 7	3. 0 to 4. 0	22. 0
50(X)	0. 0 to 1. 8	11. 0	1. 8 to 3. 7	32. 0	3. 7 to 5. 5	53. 0	5. 5 to 7. 4	74. 0

The radii of the zones of blast damage shown in the above table are based on the joint AEC-Department of Defense publication, *The Effects of Atomic Weapons*. For A-bombs between 1(X) and 10(X) sizes, this publication indicates that radii of the zones of blast damage vary with the cube root of the energy release of the bomb. The radii for damage from thermal radiation should approximate this same scale.

In speculating about the effects of atomic bombs of higher yields, this relationship between energy release and extent of damage can be used as a rough guide. Calculations made for such weapons cannot be considered authoritative. The figures for the 50(X) bomb are given merely as an example.

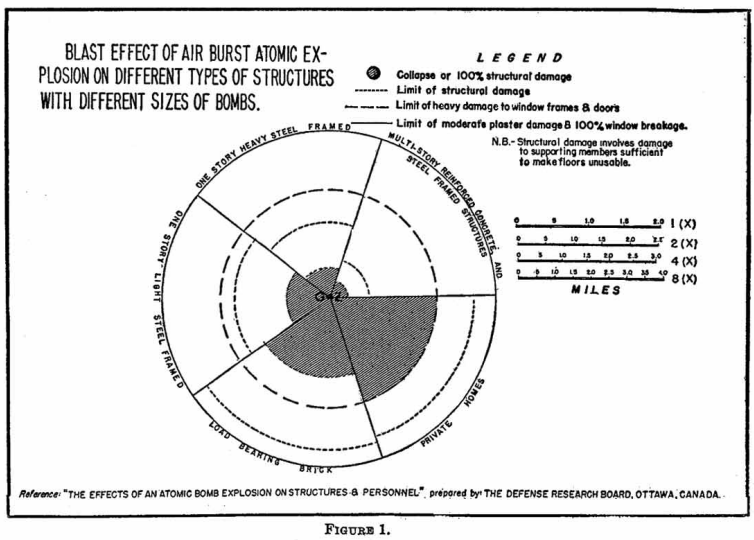

FIGURE 1.

Figure 4. Blast effect of airburst (source: US FCDA, 1953, page 16 – 17).

[19] The uninjured – unhoused were those whose housing had been destroyed and who therefore needed emergency shelter but were otherwise unharmed. Nonfatal casualty figures provided an estimation of the need for hospital beds and other emergency medical services (US FCDA, 1953, page 40).

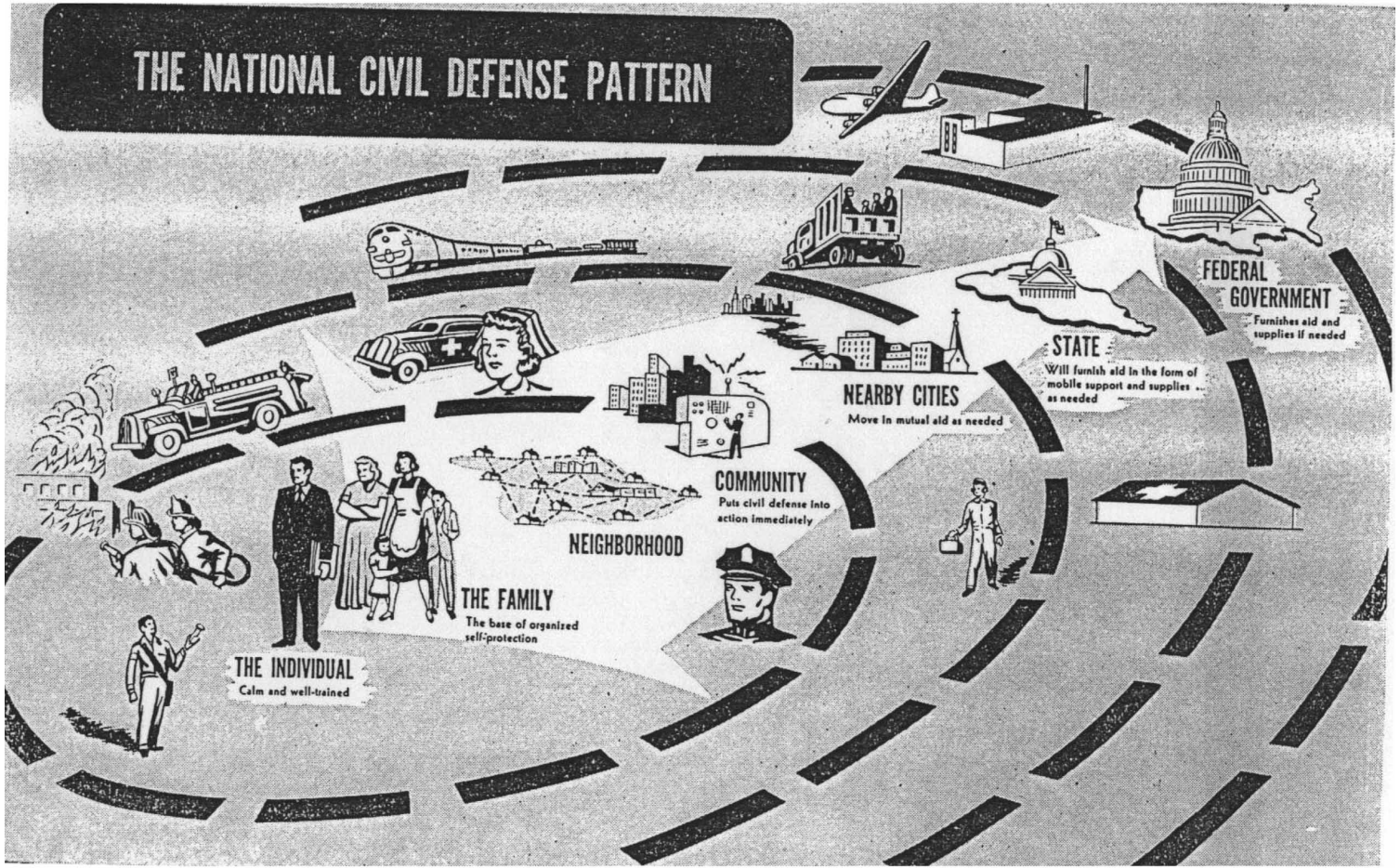

Figure 5. The national civil defense pattern (source: US NSRB, 1950, page 2).

By providing a spatialized assessment of vulnerability, this mapping technique also enabled local planners to apply the framework of emergency federalism to the specific needs of a given community in a likely attack scenario, effectively bringing the process of civil defense planning full circle. Using vulnerability maps, civil defense services could assess their own capacities and determine requirements for mutual aid and mobile support. As *USCD* summarized this logic of coordinated planning: "Civil Defense is conceived as a system which will depend largely on cooperation between critical target areas and the communities around them" (NSRB, 1950, page 4) (see figure 5). This overall vision was a distinctive adaptation of the needs of civil defense in an air-nuclear age to the US governmental system. Distributed preparedness linked emergency federalism to vulnerability mapping, grafting spatial knowledge of likely targets onto the federal organization of the government.

It is important to bear in mind that proposed civil defense programs were never fully implemented over the course of the Cold War. But these programs established a schema for the provision of security that continued to guide governmental efforts after the Cold War. As we will show in the concluding section, the techniques, organizational principles, forms of reasoning, and political maxims that had initially been given shape in civil defense were, in ensuing years, gradually extended to address a wide range of threats.

Beyond civil defense

In this paper we have described distributed preparedness as a novel schema for the provision of security that emerged in the context of superpower confrontation during the early Cold War. We conclude this paper in two steps. First, we briefly track the diffusion of distributed preparedness from civil defense to other domains over the course of the period after WWII. Second, we consider the significance of this process for the critical analysis of contemporary security.

Diffusion: from nuclear war to all-hazards planning to homeland security

Beginning in the mid-1950s, some local civil defense officials—skeptical about the very possibility of preparing for a nuclear attack—recognized that elements of distributed preparedness could be used to approach other possible threats, such as hurricanes, earthquakes, and floods (Flemming, 1957; Quarantelli, 2000; Roberts, 2006). These officials applied the techniques of vulnerability mapping, and the emergency federalist model of coordination to the challenges of domestic natural disaster response. In doing so, they defined a new field of expertise—'emergency management'.[20]

During the 1970s this field and the forms of response associated with it were institutionalized at the national level. A concern with environmental dangers such as nuclear accidents and toxic spills prompted state governments to request that governmental preparedness efforts be centralized. In 1979, FEMA was established to coordinate state and local response to major disasters. The new agency consolidated various federal emergency management and civil defense functions under the rubric of 'all-hazards planning'. All-hazards planning formalized the application of vulnerability mapping to a range of possible emergencies. FEMA adopted the emergency federalist model of response coordination as well, taking shape as a small coordinative agency rather than an extensive bureaucratic organization with hierarchical authority.

[20] As a leading figure in the field put it: "At the national level, a civil defense system developed earlier than any comparable disaster planning or emergency management system. However, at the local level, the prime concern after World War II became to prepare for and respond to disasters" (Quarantelli, 2000, page 10).

Over the following two decades, the schema of distributed preparedness was articulated as the model for emergency management in a number of domains. For example, in current pandemic flu preparedness efforts, the Department of Health and Human Services serves as a coordinative agency in a distributed federal structure, and uses imaginative enactment to exercise public health emergency response capacity. Distributed preparedness is now most visible in DHS, established after the attacks of 9/11. When FEMA was incorporated into the department in 2002, DHS inherited the techniques and organizational framework that had been developed in emergency management and civil defense. DHS also inherited FEMA's orientation to all-hazards planning, combining preparedness for terrorist attacks and natural disasters in a single agency. For example, the *National Preparedness Guidance*—the basic DHS strategy document released in spring 2005—is based on fifteen 'scenarios', including a dirty bomb attack, a major hurricane, and an influenza pandemic (US DHS, 2005). As in the 'hypothetical attack problem' from *USCD*, these scenarios are imaginatively enacted in order to determine needed response capacities and to identify vulnerable nodes in critical response systems. Thus, the novel formation of 'homeland security' involves, among other things, a new institutionalization of the distributed preparedness schema.

Distributed preparedness and the politics of contemporary security

With the establishment of DHS, and with increased concern across the government about potential emergencies, distributed preparedness is now central to US domestic security policy. And it has become so during the largest reorganization of the federal government since the 1947 National Security Act (US Congress, 1947).[21] As in the early Cold War, this reorganization has raised important questions about the politics of security and about its relationship to liberal-democratic institutions of citizenship and civilian administration.

A number of critical scholars have understood recent domestic security measures in terms of a process of 'militarization' (Farish, 2003; Graham, 2005; Light, 2002; Stoler and Bond, 2006). Through reference to examples such as the Patriot Act, extrajudicial handling of terror suspects, and urban security measures, these critics argue that the civilian sphere of autonomous rights is being curtailed and that domestic space is being partitioned through limitations on access, movement, and legal protection. Their diagnosis is that we are faced with an encroaching and increasingly oppressive security apparatus.

Such analyses present a useful corrective to most public discussions in the US, which tend to express an uncritical demand for ever more security. But there is a risk in replacing a blanket embrace of security measures with blanket denunciation. What is needed, arguably, is not an overarching critique of the 'militarization' or securitization of civilian life but an analytics that allows us to distinguish between different processes underway in the complex field of contemporary security. With such an analytics, it becomes possible to identify specific kinds of security problems and the schemas that have been developed to manage them in a given context. The question, then, is not *whether* something is being securitized, but what *type* of security is being discussed. What is being secured? Through what kinds of interventions? And with what political implications?

Insofar as current security initiatives are oriented to distributed preparedness, they should not be equated with a process of 'militarization'—if that refers to an expansion in the scope of military intervention and coercive control in civilian life. The US military has consistently been reluctant to engage in distributed preparedness, as much today as in the immediate post-WWII period. Moreover, as we have seen, the explicit concern of those who initially developed distributed preparedness was with

[21] This point is made in the White House's report about Hurricane Katrina (2006).

how measures for approaching domestic emergencies might be organized in a way that would not compromise the distributed sovereignties of American federalism and the liberal traditions of the American political system. Distributed preparedness was invented as a decentralized, civilian organizational form in part to *ward off* Cold War concerns about the emergence of a garrison state.

What, then, are the central issues that the identification of distributed preparedness raises for critical scholarship? To answer this question, it is necessary to consider the type of security pursued through this schema. Distributed preparedness does not aim to secure borders or defeat foreign enemies. Rather, it involves assessing vulnerability and preparing for a response to emergencies through the institutions of American federalism.[22] From this perspective, the most important issue for critical scholars in examining preparedness initiatives may not be an *excess* of security measures. Rather, it may be the absence of such measures or their inadequacy, as the response to Hurricane Katrina graphically illustrated.

This inadequacy can be understood, at least in part, as a product of the organizational form of distributed preparedness, and of the political context in which it operates. Chronic problems with disaster response in the US are built into the very organizational structure of emergency management. Difficulties in coordination and communication among bureaucracies are the product of tensions that are intrinsic to the federal structure and the distributed responsibility of the US model of emergency management. These difficulties can be overcome, but only through intensive planning and exercise. However, such efforts are often resisted for reasons that are, again, illuminated by the broader politics of distributed preparedness. Distributed preparedness was designed not only to defend the civilian sphere against military intrusion, but also as part of an impulse to defend the prerogatives of local government and private enterprise against a centralized governmental authority. In this light, the central critical question to be asked of many domestic security measures may concern not excessive militarization, but rather the failure to undertake measures that threaten the autonomy of private enterprise or local government.[23]

The identification of distributed preparedness as a distinctive form of domestic security also suggests how critical scholars might envision an alternative politics of security. For example, measures to allow for extrajudicial detentions that increase the power of the federal government and curtail civil liberties and protections are clearly *not* based on the model of distributed preparedness. An approach based on distributed preparedness, by contrast, would seek to maintain the decentralized power of the US federal system and would emphasize transparency and communication across public and private actors rather than secrecy and centralization. Or, to take another example, the pursuit of increased security through attacks on foreign enemies requires military expenditures that drain resources from health and social security measures. Measures based on distributed preparedness might instead draw attention to vulnerabilities that are the products of decaying infrastructure, isolated areas of poverty, or weak public health services—and would thus lead to spending that would complement social welfare efforts. In this sense, a more differentiated analysis of current security measures points not only to salient sites of critique, but also to unexpected possibilities for intervention into the politics of contemporary security.

[22] Elsewhere (Collier and Lakoff, 2006; 2007), we have distinguished these forms of security as sovereign state security versus vital systems security.

[23] The Bush administration's lack of enthusiasm for the emergency management aspects of homeland security is explained in part by a resistance to expanding the federal government and an unwillingness to interfere with the private sector.

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