

Orr, Jackie. *Panic Diaries: A Genealogy of Panic Disorders*.  
Durham: Duke UP, 2006.

#### NIGHT AND I

Daddy was a functionalist. He worked as an electrical engineer for Bell Telephone Laboratories in Reading, Pennsylvania, in the 1960s and we lived in a white suburb in a yellow house with a green lawn and the NORMS AND VALUES OF OUR COMMUNITY could be strongly correlated with the ideological tendencies of large sectors of other white U.S. suburbs with green lawns and sufficient incomes for family vacations in New Jersey and a thirty-foot civil defense siren next to the neighborhood swimming pool.

Later in high school in a different suburb where they taught you German with Frau Oplesch who was on television three days a week when they wheeled her in on the TV cart to say EINS ZWEI DREI then act like she heard you repeating it back I learned a way of writing poetry the teacher called prose poetry the main technique of which is TO WRITE AND WRITE IN VERY LONG SENTENCES WITH HARDLY ANY PUNCTUATION AT ALL and the model for this genre was schizophrenia which in the mid-1970s didn't surprise anyone that some supposedly crazy people did poetry or what the teacher called stream of consciousness writing or at least it had the appearance of such though the teacher said the best writers probably edited quite a bit except perhaps THE CRAZY PEOPLE who just got it right the first time. So we'd sit in poetry class and read out loud our latest efforts that went something like "a wind blows up my dress / and so i think of you" after which we would discuss each other's poems and say what we got out of them (the interpretation).

But in Reading, Pennsylvania, in the 1960s there was no schizophrenic prose poetry in the classroom however quite a focus on Thanksgiving and the proper spelling of "syncopation" and the colorful hexagrams on the large red barns of the Amish people visible from the interstate highway and after the family supper we looked at the tiny integrated circuit Daddy brought home from work under my brother's microscope. Gold filaments. Perfectly straight parallel tracks crossing and crisscrossing. Precise as an Amish hexagram.



Nuclear family relations. Federal Civil Defense Administration, *Operation Doorstep*, 1953.

Daddy said the tiny integrated circuit is the ESSENTIAL BUILDING BLOCK of most of our smartest machines of the day at Bell Labs they make them so easily they only cost twenty-five cents a piece which I considered an impressive achievement like the time Daddy took our TV all apart to show me where the pictures came from however even then I suspected HIS EXPLANATION WAS AT BEST PARTIAL.

In 1962 when we moved to the suburbs of Reading, Pennsylvania, the United States had 224 intercontinental ballistic missiles built to deliver nuclear bombs to their target. The Soviet Union had almost 300 intercontinental ballistic missiles built for the same purpose.<sup>2</sup> I don't remember being afraid of nuclear war. I remember dressing up at night as the Bride of Frankenstein a Siamese twin a black dinosaur with a knobby green mask for Halloween my favorite holiday when we children of Reading paraded through the streets after dark in a weird winding procession of pirates witches gypsies goblins sorcerers skeletons trailing for blocks and blocks behind the local red fire engine while the fathers of Reading held flaming torches and walked silent beside. Protecting us from the dark. I presume.

#### REALLY AWFULLY SCARED

The picture of public thinking about the atomic bomb is now relatively clear. We have seen that despite the magnitude of the

destructive power represented by the bomb, and the unprecedented publicity it has received through the mass media, its importance is not reflected in the role it holds in the conscious life of the population.—DOUVAN AND WITHEY, "Some Attitudinal Consequences of Atomic Energy" (1953)<sup>3</sup>

It will be argued that a huge fraction of the public, perhaps the majority, *already* displays clinical symptoms indicative of hysteria and predisposing to panic.—WYLIE, "Panic, Psychology, and the Bomb" (1954)<sup>4</sup>

Operation Crossroads is carried out by the U.S. military during the summer of 1946. In the Bikini atoll of the South Pacific, the United States tests the effects of atomic weaponry by dropping bombs on an assembled fleet of its own antiquated naval ships. On July 1, an atomic bomb is exploded in the air over the fleet. On July 26, a second bomb is detonated underwater below the fleet. A major international media event, the Bikini explosions usher in a brave new era of nuclear testing in which the targeting scenario of atomic attack commonly involves the United States bombing itself. And measuring the effects.<sup>5</sup>

One of the methods for measuring the atomic bombs' effects is a national survey of U.S. public opinion conducted before and after the Bikini experiment. Funded by the Rockefeller Foundation and the Carnegie Corporation at the request of the Social Science Research Council (SSRC), the survey questionnaire is administered to national cross-section samples of the U.S. population in June 1946 and again in August. Professor Hadley Cantril, along with Rensis Likert, former director of the Morale Division of the United States Strategic Bombing Survey (USSBS), and Leonard S. Cottrell Jr., former director of the Survey Section of the War Department's Research Branch, help to oversee the survey project. In a foreword to the book version of the survey's findings, "written primarily for the intelligent citizen,"<sup>6</sup> General Frederick Osborn (former director of the Morale Division of the Research Branch) applauds recent advances in modern social thinking made possible by "new techniques [and] new methods of analysis of factual objective data," including the public opinion survey. "This new instrument," he asserts, "will increasingly give us a background of fact against which to check on the validity of

the hypotheses or assumptions which are a necessary premise to practical action.”<sup>7</sup>

General Osborn’s positive assessment of the public opinion survey as a powerful new technique is apparently shared by the U.S. State Department, which secretly contracts monthly survey research on U.S. public opinion on foreign affairs from 1945 to 1957. Conducted by the fledgling National Opinion Research Center (NORC), the secret State Department surveys provide NORC with a sustained source of income in its early years and serve as a methodological training ground and fact-producing machine for what will become one of the most widely used survey databases in the social sciences.<sup>8</sup>

The State Department’s clandestine contract with NORC is arranged through Professor Hadley Cantril, director of Princeton’s Office of Public Opinion Research (one of two U.S. polling organizations used by the Central Intelligence Agency in the immediate postwar years).<sup>9</sup> The Professor’s public service to the state extends back at least to World War II, when Cantril performs a series of confidential public opinion surveys for the State Department, the White House, and several military agencies.<sup>10</sup> Cantril’s secret research for the U.S. government follows close on the heels of the study for which he is best known: *The Invasion from Mars* (1940), a social psychology of the panic created by Orson Welles’s radio broadcast of H. G. Wells’s *The War of the Worlds*.

The SSRC survey of public opinion before and after the Bikini explosions investigates U.S. public feelings about a wide range of issues in current international affairs. The published version of the study highlights the troubling evidence that the U.S. public tends to be confused, inconsistent, contradictory, poorly informed, or undecided about world affairs, including the grave issues surrounding atomic weapons. Although 98 percent of those surveyed report knowing that the atomic bomb exists, and while the vast majority acknowledge the bomb’s immense destructive potential, researchers note there is “little indication that the people recognize the revolutionary significance of the new weapon.”<sup>11</sup> In marked contrast with the public proclamations of leading scientists, over half of the survey subjects believe that the United States can develop an effective defense against atomic weapons. And while close to 60 percent of respondents believe another world war is possible or likely within the next

twenty-five years—and two-thirds of the total sample agree that there is a real danger of an atomic bomb being used against the United States—over half of the respondents also report that they are not at all worried about the atomic bomb. The public appears aware but unthreatened, anticipating atomic attack but personally unconcerned. The atomic bomb figures in people’s imagination of the future, “but its inescapability has not yet been borne in upon most of them.” In conclusion, the book’s authors suggest that a “focusing of attention and securing [of] psychological involvement” is necessary for Americans to fully appreciate and participate in the government of world affairs in the atomic age.<sup>12</sup>

As for the study’s original hypothesis that there might be a measurable difference in public opinion before and after the Bikini experiments, the factual evidence is resoundingly clear: the effects of Operation Crossroads on U.S. public opinion is nil. Public interest in the highly publicized atomic explosions, the authors remark, “was perhaps merely an interest in a spectacular event.”<sup>13</sup>

In August 1946, Paramount Pictures releases a newsreel to movie theaters across the country that combines footage of the aftermath of the bombing of Hiroshima with images of the Bikini explosions.<sup>14</sup>

Regardless of the facts borne out in the SSRC survey, and in spite of the somewhat disappointing performance of the atomic bombs in the Bikini atoll (only a few of the ships were damaged), the official top-secret analysis of Operation Crossroads prepared for President Truman in 1947 by the Joint Chiefs of Staff delivers an unequivocal message: the primary value of the atomic bomb is its “psychological implication,” that is, its capacity to terrorize and demoralize an enemy nation, perhaps without ever being actually deployed.<sup>15</sup> The new weapon’s ultimate military power is psychological. The panic that would accompany the use, or perhaps merely the threat, of nuclear weapons is therefore a key strategic advantage for a nation on the military offensive, and a problem of the highest order for the nation planning its own defense. The country best able to exploit this potentially nerve-shattering psychological situation will prevail.

In August 1947, two months after their evaluation of Operation Crossroads, the Joint Chiefs of Staff develop a war plan against the Soviet Union that opens with the atomic bombing of civilians in Soviet cities. Given the suggestive code name “Broiler,” the plan presumes the bombing would

create not only mass destruction but mass terror, profound confusion, and social chaos as millions panic in a helpless attempt to escape. Civil defense theory in the United States projects and reverses the assumptions of "Broiler" in its imagination of Soviet military strategy; the task of civil defense becomes the protection of U.S. civilian morale in the event of a Soviet nuclear offensive aimed at civilian targets and intended to panic and disable the nation.<sup>16</sup>

I don't know why this all seems so important to me. I'm not really sure it'll help me get better. I can't really say if it's why I got sick. I'm hoping maybe it'll help me get out of here. In the daytime they let me go out to visit the library where there're stacks and stacks of stories like these I wander through I see maps're posted at the entrance to each library room though I find they don't help much to know what comes after what which connects to whom or when it just all falls apart against the codes of strict meaning. At night, I have to come back in here to dream.

In a series of both classified and public documents produced in the late 1940s to address the civil defense and social problems facing U.S. policymakers in the atomic era, the findings of the Joint Chiefs of Staff's evaluation of Operation Crossroads become foundational assumptions for thinking about atomic warfare. The problem of panic and the destruction of national morale are recognized repeatedly as the main obstacles to the successful conduct of nuclear war. In the first national civil defense plan proposed by the newly established Office of Civil Defense Planning in 1948, a three-hundred-page blueprint of a "model state civil defense organization" relies heavily on plans for the evacuation and relocation of threatened civilian populations but notes that "fear and panic render large groups almost unmanageable and could easily destroy the effectiveness of the best laid transportation plan."<sup>17</sup> In an early Office of Civil Defense instruction manual entitled *Panic Control and Prevention* (1951), readers learn that "mass panic can produce more damage to life and property than any number of atomic bombs. . . . If war comes, it will be a total, absolute war. Fitness of the civilian will be of equal importance with fitness of the fighter. The outcome of the war will depend upon the staying power of the civilian just as much as upon that of the soldier. The fatigued civilian will be the unfit, panic-ripe civilian."<sup>18</sup> As an antidote to mass panic and terror, the Office of Civil Defense calls for a nationwide

public information campaign to inform the public of atomic dangers and of the steps that can be taken to protect against them.

But by 1953, little has changed in the disturbing social scientific picture of a confused public, seemingly psychologically distanced from the looming dangers of atomic warfare. Researchers at the University of Michigan's Survey Research Center—established in 1946 by Rensis Likert, former director of the Morale Division of the USSBS and advisor to the SSRC study of Operation Crossroads—summarize their portrait of a public uninterested in learning about the effects of atomic bombs, unaffected by conscious worry about atomic war, with unstable, labile attitudes lacking any "logical structure" or evidence of well-developed, differentiated thinking.<sup>19</sup> They conclude that the high profile of atomic energy in the mass media and in "popular fantasy" stands in stark contrast to its apparent absence in "people's conscious day-to-day thoughts." The psychological explanation for such a paradoxical situation, they suggest, rests in a combination of factors, including perhaps the disavowal of anxiety as a defense against intolerable feelings of fear and powerlessness in the face of the new weapons. Further research and systematic investigation are recommended.<sup>20</sup>

In a 1954 essay published in the *Bulletin of the Atomic Scientists*, the popular novelist Philip Wylie paints a dramatically different image of the U.S. public suffering from atomic stress. In "Panic, Psychology, and the Bomb," Wylie writes:

The general population has been subjected, for nearly nine years, to a "war of nerves" unwittingly waged against it by its own leaders. There has been no coherent plan for atomic information, for public education, or even for presenting simple fact. Secrecy has built up potential psychological catastrophe to a degree so great that secrecy *alone* (in a nation unused to it) explains much of the "repressed fear" discussed here. *Hysteria and panic rise from the unknown and the misunderstood, the withheld, the hinted, the suspected, the ignored, and from the repressed dread that materializes unexpectedly.*<sup>21</sup>

Against reassurances that the U.S. public will face the ravages of atomic assault calmly, Wylie asserts that the public is "already exhibiting on a massive scale a vast variety of 'symptoms' which, in clinical psychology,

are known to be the results of deeply repressed fear.”<sup>22</sup> Wylie interprets the growing public fascination with flying saucers, the widespread apathy toward the nuclear threat, and the spreading persecutory zeal of anti-Communism as evidence of a mass hysteria launched by the repressed terror of atomic war. He proposes the establishment of a federal committee that would create a factual, rational basis for “atomic public relations.” In our atomic age, he cautions, “to exploit the whole of physics without employing all known psychology” is to invite catastrophe on an unprecedented scale. The “*larger part of our catastrophe*,” Wylie concludes, “would be the product of *panic*!”<sup>23</sup>

#### THE GROUP

What of the behavior of groups? It is evident that each society has its peculiarities of vocabulary and grammar, and that members of even small groups usually develop jargon and special vocabularies which serve instrumental or ritualistic ends. . . . The constitution of any human group is thus a symbolic, not a physical, fact.

—ANSELM STRAUSS<sup>24</sup>

Any style of empiricism involves . . . a choice as to what is most real. —C. WRIGHT MILLS<sup>25</sup>

The social psychology of panic and group behavior in the postwar years struggles to elaborate the empirical promise and practices of wartime research. In 1947 the sociologist Anselm Strauss laments the paucity of empirical attention to collective behavior as a vital field of sociological concern.<sup>26</sup> In the closing years of World War II, Strauss published an overview of the existing literature on collective panic that called for “a more direct attack upon panic than has hitherto been accorded it,” citing the absence of knowledge about specific causal mechanisms or preventative measures, and discussing the methodological obstacles to a systematic empirical research program. “One of the major tasks facing the student of panic,” he wrote in 1944, “is the development of methods designed to give him the kind of data he needs to answer the questions he raises about the phenomena of panic.”<sup>27</sup>

In the next ten years, a “more direct attack” is made on the problem

of data and methods that can make panic more responsive to researchers’ queries. These developments take place within the broader context of the academic social sciences becoming integrated in historically new ways with government and corporate administrative agendas, funding networks, and research priorities.<sup>28</sup> The World War II liaison between the study of group behavior, empirical research methods modeled after practices in the “natural” sciences, and the imperative to produce knowledge useful for the management and social control of populations under investigation is generalized into a broad mandate for social science research. For the group of scholars interested in panic, the post-World War II construction of a shared language and methodological vocabulary for studying panic and collective behavior becomes a means for securing professional legitimacy as well as funding support and government interest.

The establishment of survey research methods as a respected technique of social scientific inquiry (and a key feature of graduate training in many sociology departments) takes place in these postwar years. Although the publication of *The American Soldier: Studies in Social Psychology* (1949–50), a four-volume overview of War Department survey data from World War II, is met with criticism in some corners of sociology, a popular volume of commentary on the studies and a reanalysis of some of the original survey data is published in 1950.<sup>29</sup> Edited by Paul Lazarsfeld and Robert K. Merton, *Continuities in Social Research: Studies in the Scope and Method of “The American Soldier”* is designed for use as a textbook in college and university classrooms. Seeking to use the War Department’s social psychology studies as an inspiration for amassing a cumulative body of sociological knowledge and methodological techniques, Lazarsfeld and Merton argue for the importance of public attitude and opinion surveys as “applied research,” vital to effective policy formation and administrative decision making. Samuel Stouffer, a sociologist and editor of the original *American Soldier* studies, asserts in the book’s final essay: “If social science is to be taken seriously and receive large financial support, its ‘engineering’ applications must visibly pay off. It is an interesting speculation as to how much of the vast financial support of the ‘pure’ research in so-called natural science would be forthcoming except for the spectacular applications in industry, in health, in war.”<sup>30</sup> By

the time that *Continuities in Social Research* is published, Paul Lazarsfeld and the Princeton Radio Research Project have moved to New York City and — out of the organizational seed of that Rockefeller-funded project — have cultured what becomes a powerful, nationally renowned center of social science research: the Columbia Bureau of Applied Social Research, where survey research techniques are a major focus.<sup>31</sup>

Survey research is not the only methodological front on which social psychology and the study of group behavior expand their stake in scientific techniques and applied research. Borrowing heavily from the procedural repertoire of psychology, which establishes its “scientific” methods and administrative value in the United States several decades earlier, social psychology by the mid-1950s displays a confident plurality of empirical methods based on the precise (often statistically testable) measurement of psychological behavior and the objective (often mathematically inflected) analysis of its variations and causal dynamics.<sup>32</sup> With a self-conscious neopositivist zeal, postwar social psychology pursues an imagined unity with science through the adoption of the “operational methods in physics and mathematics,” whereby the methods of empirical research anchor the validity of theoretical propositions in “concrete operations which can be performed, are repeatable and public.”<sup>33</sup>

In the early 1950s, collective panic is subject to a new form of empirical investigation: the controlled laboratory experiment. Alexander Mintz publishes “Non-adaptive Group Behavior” (1951), based on his experimental investigation of the phenomenology of panic in small groups. (In Anselm Strauss’s 1944 overview of the panic literature, he noted the prohibition in a “free society” on the use of experimental techniques to study mass panic in humans, contrasting such controls to Nazi Germany, where panic experiments had been reported.<sup>34</sup> But twenty-five years later, Stanley Milgram and Hans Toch report that the study of panic is one of the few areas in collective behavior where a “discernible experimental tradition” can be identified.)<sup>35</sup> Mintz hypothesizes that the strikingly non-adaptive behavior of people in panic situations is due not to emotional excitement but to a reasonable and rational perception of their situation and its likely outcome. He frames his experiment as an empirical challenge to social psychological notions of “contagion” and “suggestion” as the decisive factor in collective panic.<sup>36</sup> Mintz tries to move beyond the

mystified, difficult-to-operationalize concept of suggestion, instead approaching group behavior in more rational and rationalizable terms.

Mintz’s thinking is part of a broader postwar conceptual reorientation of collective behavior that rejects the prevalent prewar notion of such behavior as intrinsically irrational. Instead, collective behavior is perceived as a form of group “problem solving,” or a collective attempt to adapt successfully to changes in the environment.<sup>37</sup> In a 1953 essay, Anselm Strauss suggests that even under conditions of extreme stress like panic, humans continue to engage in “high order” social behavior involving the ongoing interpretation of their environment. Dismissing notions of panic as a regression to instinctual behavior in which “social factors [are] temporarily inoperable,” Strauss defines collective panic as the effect of “particular definitions of situations, of interaction that still involves *high order sign behavior*, including *complex and socialized emoting, perceiving, and remembering*.”<sup>38</sup> For Strauss, communication and “high order sign behavior” are essential components of any kind of group behavior. For some of his colleagues, experimental access to these forms of communication makes possible meaningful laboratory research on group behavior’s variable features.

For Mintz in 1951, a reasonable experimental operationalization of collective panic behavior entails the following. A group of approximately twenty student volunteers assembles in the laboratory. Each individual is given a piece of string attached to a cone. The cones are placed together inside a glass bottle with a thin neck. Under a number of experimentally varied conditions, group members are instructed to pull their cones out of the bottle within a limited number of seconds or risk being fined ten cents if they fail. The threat of a traffic jam in the bottleneck, preventing all members from achieving their goal, is the experimental equivalent of a panic situation, where, for example, audience members caught in a theater fire jam the exits in a panicky attempt to escape burning to death. Mintz suggests that his experimental findings can help explain the differential group behavior during bank failures, food or gasoline shortages, and submarine disasters, although “full verification” of the theories awaits investigation of “real life situations” — which will be forthcoming.<sup>39</sup>

Why insert panic into a thin-necked glass bottle? How to fit a submarine disaster through the door of an experimental laboratory? Mintz’s

“miniature social situations” perform the exceedingly useful—if, to the uninitiated, somewhat magical—task of representing the social and its psychology in a form conducive to radical spatial contraction and the precise measurement of observable behaviors across time.<sup>40</sup> The conceptual abstractions that undergird this miniaturization are not, initially, mathematical abstractions, although they stage and will later permit quantitative and statistical analysis. The abstractions are initially founded elsewhere, in the rather commonplace symbolic operations of metaphor and analogy.

For example, a defining feature of panic for Mintz is its emergence in a social situation with a volatile reward structure, as perceived by social participants. Thus people who perceive the risk of dying in a theater fire are like people who perceive they might be fined ten cents for failure to perform a task; thus the behavior of a group attempting to pull cones out of a thin-necked bottle is analogous to the behavior of a group panicking in a theater fire; thus the information elicited from a laboratory experiment can be applied to the analysis of behavior in “real” social situations. Thus “behavior” is an analytic unit capable of being abstractly represented and reproduced in a laboratory. And a social theory of group behavior is capable of being experimentally tested: “If the theory is correct it should be possible to illustrate its functioning in the laboratory.”<sup>41</sup>

If the theory functions in the laboratory, then it’s possible for the methodical social psychologist to empirically verify that the successful control of panic depends on the control of individuals’ perception of their social situation. This is useful. If you think I’m saying this is just stupid, you’re not following the story. I’m saying this is useful information. For social psychologists who begin to perceive how their theories might perform empirically inside controlled laboratories, this is very useful information. Individuals’ perception of their social situation is the key to control. Of panic, I mean. What does panic mean? Panic means perceiving that your situation’s out of control, so that it’s in your own best interest to be out of control, too. Panic means perceiving if you don’t get that cone out of that bottle in the next fifteen seconds you’re gonna nonadaptively burn to death inside this crazy social situation in which the proliferating laboratories of empirical findings start to function in the 1950s like a theater on fire in order to accumulate data on the pileup of cones

and corpses through the abstracted perceptions of a group of social psychologists signaling to each other through a new language of technique. Panic might even be perceiving that the new language of technique inside the laboratory speaks worlds about the social situation outside the laboratory inside which panic is now supposed to speak. Panic could be perceiving that there are no clear boundaries between attempts to control perceptions inside the experimental laboratory and outside. Panic may be starting to perceive that this experiment that it is inside is also outside and so the social situation’s feeling pretty out of control. I mean, experimentally speaking, panic is perceiving things’re really getting out of control.

Two years after Mintz’s experiment, social psychology succeeds in fitting a crowd into a twenty-one-by-twenty-four-foot room and testing its behavior. The feat is achieved by G. E. Swanson at the University of Michigan.<sup>42</sup> Viewing his research as a contribution to a “general theory of social organization” as called for by the sociologist Talcott Parsons, Swanson begins “A Preliminary Laboratory Study of the Acting Crowd” (1953) by asserting that the behavior of crowds “as well as the other phenomena of collective behavior” can “profitably be conceptualized, along with bureaucracies, families, labor unions, political parties, voluntary organizations, and all other groups, as *special forms of the interpersonal patterns of influence* that appear as people adapt to one another in the course of mastering the problems set by the environment.”<sup>43</sup> This general concept of the social group allows Swanson to define the essential feature of the crowd as “a particular form of organization for the collective solution of problems—an organizational form that might appear in populations of any size from two on up.” Loosed from any definition that relies on large numbers of people, the crowd can thus be miniaturized, operationalized, and symbolically reproduced in the abstract form of an organizational pattern. Or, in Swanson’s words, “with such a conception, it became meaningful to think of producing crowd behavior in small, experimentally created populations.”<sup>44</sup> That the behavior of a small number of people in a room could be meaningfully thought of as crowd behavior rests entirely on the abstract, generalized, and useful definition of an acting crowd as a patterned form emerging out of the effort to master the environment.





At the controls.  
Federal Civil Defense  
Administration/Atomic  
Energy Commission,  
*Operation Ivy*, 1952.

Swanson's experiment involves assembling twelve groups, each group composed of three student volunteers, inside a laboratory with a playing area equipped with golf balls, pucks, a goal area, and a set of signal lights on a control desk. Instructions are read out loud to the volunteers: "During the war, and at present, social scientists have been exploring the way groups deal with problems." Today's experiment asks the volunteers to attempt to solve a problem that is "patterned on the situations created by the State Department . . . for selecting groups of skilled personnel to handle particularly difficult jobs." The volunteers are told that they will be observed playing a competitive game. They will not be informed what the method is for scoring points in the game. When a player breaks the unknown rules of the game, a red penalty signal will flash. A green signal will flash when a player scores a point according to the game's secret rules. "The way to get the most points," the volunteers are advised, "is to work together, plan together, and, at all times, to keep moving." As soon as the volunteers begin the experiment, researchers turn on a tape recorder in an adjoining room that loudly plays a prerecorded voice reading an excerpt from a fundamentalist treatise on the nature of heaven, the climactic lines from Karl Marx's *The Communist Manifesto*, a newspaper report on a vegetarian Thanksgiving dinner, and a radio broadcast of a Detroit Tigers baseball game, "complete with the jingle advertising, 'Brewster, the Goebel Beer Rooster.'" <sup>45</sup>

The experiment, Swanson explains, is designed to test a set of ten pre-

dictions, based on the recent literature on crowd behavior, concerning how different groups will behave in relation to ten dependent variables including suggestibility, group communication, and success in performing a task. Swanson reports that his experimental findings indicate that "it is possible to predict a large share of the phenomena of the acting crowd."<sup>46</sup>

If, indeed, as Anselm Strauss suggests in 1953, the constitution of any human group is "a symbolic, not a physical, fact," then the symbolic practices of social psychologists in the 1950s begin to constitute that human group through languages of abstraction and vocabularies of method that make the "group" appear to be an increasingly malleable symbolic and psychological entity. Accessible via the instrumental linguistics of control. Open to the administrative rituals of prediction.

That panic and crowd behavior could be symbolically constituted, tested, and analyzed in the experimental laboratories of social psychology indicates, as well, an interesting change in the constitution of social psychologists and sociologists as a human group. Bound together by a desire to empirically define and manipulate their "object" of study, researchers approach ever more closely the promise of finding the data and methods needed to make panic speak in the language of sociology's own changing symbolic universe, to ensure panic's fluency in the same vocabularies as the questions it is asked, repeatedly and with a disciplined insistence, to address. As the language of social psychology grows more complex, more practiced in the science of its own semiotics and high-order sign making, is it any surprise to find panic, too, advancing in symbolic complexities? To hear panic signaling—from within that glass bottle, inside the walls of this oh-so-symbolically constituted test tube—the reasonable structures of its own social perceptions?

#### ORDER WAS CRACKING

Since the advent of the atomic bomb, unfortunate psychological reactions have developed in the minds of civilians. . . . The fear reaction of the uninitiated civilian is . . . of such magnitude that it could well interfere with important military missions or civil defense in time of war.

... Luckily, if given half a chance, hope rises readily in even the darkest situation. For all people, with the exception of psychopaths, are more interested in their futures than in their disordered pasts.

—Office of Civil Defense<sup>47</sup>

The byline reads “Moscow, 1960,” and the article narrates the historical highlights of world war as they spin out from the Soviet assassination attempt on the Yugoslav leader Marshal Tito on May 10, 1952. After a successful Soviet takeover of Belgrade’s new radio broadcasting station, an armed man in the engineering control room shouts into the microphone, “Tito is dead!” “This was the signal,” the article recites, “for the start of 32 months of unlimited catastrophe for the human race, in the course of which millions of innocent people met violent deaths. . . . Among their scorched, shattered graveyards were the atomized ruins of Washington, Chicago, Philadelphia, Detroit, New York, London and eventually Moscow.”<sup>48</sup>

On May 14, 1952, the United States begins dropping atomic bombs on selected military and industrial targets in the Soviet Union, carefully avoiding civilian population centers. The round-the-clock saturation bombing campaign continues for three months and sixteen days.<sup>49</sup> One year later, the Soviet Union responds with the atomic bombing of civilians in targeted U.S. cities. An eyewitness account of the attack on Washington, D.C., accompanied by a two-page illustration of the nation’s capital on fire — “Note Pentagon blazing (at upper left),” the caption reads — describes the catastrophic scene:

The American capital is missing in action.

A single enemy atom bomb has destroyed the heart of the city. The rest is rapidly becoming a fire-washed memory. The flames are raging over 18 square miles.

... Civil defense has broken down. The few valiant disaster squads are helpless in this homeless flood of agony and misery. Troops are moving in to restore order among maddened masses trying to flee the city.<sup>50</sup>

The United States retaliates in July 1953 with its first atomic assault on a civilian center — Moscow. An eyewitness report-from-the-air is written

by Edward R. Murrow, the popular CBS commentator, who accompanies the military airplane crew that drops the atom bomb.<sup>51</sup>

This dramatic staging of World War III is offered up by *Collier’s* magazine in October 1951, in a special issue entitled “Preview of the War We Do Not Want.” *Collier’s*, a popular weekly magazine with a wide circulation aimed at a white, suburban, middle-class audience, designs the special issue in consultation with top military, economic, and political thinkers in U.S. and international affairs. “Operation Eggnog” — the “purposely meaningless code name” that *Collier’s* assigns to the special issue — draws on “authoritative research” and the imaginations of academics, novelists, former Communists, playwrights, and journalists to construct this “spectacular” vision of the future through a retrospective look back on a decade that has not yet taken place: a decade opening with war, progressing to triumph, and closing with the democratic reconstruction of Soviet society in the ruins of its military defeat.<sup>52</sup>

The hypothetical war reportage in *Collier’s* appears in the same year that the new Federal Civil Defense Administration (FCDA) launches “one of the largest mass programs the nation has ever essayed”: the public education and training of U.S. civilians in the “proper public attitudes and behavior” necessary to their own defense.<sup>53</sup> Created by presidential executive order, the FCDA’s mandate, spelled out in the Federal Civil Defense Act of 1950, is to provide for the civilian defense of both life and property in the event of war through the organization of a volunteer civil defense corps and the establishment of emergency communication systems to warn of enemy attack.<sup>54</sup>

A major aim of the civil defense public information program is to educate citizens about the basic facts of the atomic bomb’s effects and to suggest simple, common-sense, available remedies. Since “panic resulting from enemy attack may well be the most difficult of all civil defense problems,” explains a 1951 instruction manual for local civil defense leaders, a “determined and earnest attempt must be made to understand and control human behavior.”<sup>55</sup>

With “Keep Calm!” as its easy-to-remember antidote to atomic disease, the FCDA and its state and local infrastructures sponsor a range of print, radio, television, and cinematic messages aimed at disseminating the relevant facts and advising the appropriate behaviors. Over twenty

million copies of the FCDA's pamphlet "Survival under Atomic Attack" are distributed in 1951.<sup>56</sup> In folksy prose, the text describes what to expect if even that worst-case scenario occurs: an atomic blast catches you unawares and you "soak up a serious dose of explosive radioactivity." Readers are informed that "for a few days you might continue to feel below par and about 2 weeks later most of your hair might fall out. . . . But in spite of it all, you would still stand better than an even chance of making a complete recovery, including having your hair grow in again."<sup>57</sup> The problem of lingering radioactivity in the environment—as detected by "your local radiological defense teams"—can be addressed by taking a shower. The pamphlet concludes: "Civil defense must start with you. But if you lose your head and blindly attempt to run from the dangers, you may touch off a panic that will cost your life and put tremendous obstacles in the way of your Civil Defense Corps." The pamphlet includes a tear-out sheet entitled "Six Survival Secrets for Atomic Attacks," which readers are instructed to keep with them at all times until memorized.<sup>58</sup>

In April 1951, the FCDA releases a movie version of *Survival under Atomic Attack*. Commercial distributors sell more prints of *Survival* in the first nine months after its release than any other film in the history of the industry.<sup>59</sup> In the next several years, the FCDA's mass public education program produces an instructive litany of films, newsreels, and made-for-TV series including *Let's Face It*, *Bombproof*, *Operation Scramble*, *What You Should Know about Biological Warfare*, *Disaster on Main Street*, and *Target You*.<sup>60</sup>

But alongside government-sponsored encouragements to "Keep Calm!" and efforts to render an atomic blast a manageable, even familiar, scenario, an apparently contradictory effort to frighten the U.S. public is simultaneously under way. From its inception, the FCDA names "public apathy" toward civilian defense as the major obstacle to the successful conduct of its task.<sup>61</sup> The concept of civilian defense as a necessary feature of "total defense"—the logical corollary of "total war"<sup>62</sup>—has not yet entered the consciousness of a reticent U.S. public. In a public letter to President Truman in 1952, the first director of the FCDA explains: "Too few realize that the atomic bomb changed the character of warfare and that in future conflicts the man and woman in the street and in the factory will be the prime target—that they will be in the front line of battle. . . . [T]here

is little real understanding of the need for a balanced defense, composed of the civil and the military serving in a co-equal partnership."<sup>63</sup> In the *Report of the Project East River* (1952), an extensive study of the problems of civil defense commissioned by the Department of Defense, the National Security Resources Board, and the FCDA, the authors cite attitude surveys conducted by the University of Michigan Survey Research Center to argue that one "major barrier to involvement and activity in civil defense" is the public's tendency to believe that an atomic attack cannot really occur in their hometown, or that the U.S. military will successfully protect the country should such an attack take place.<sup>64</sup> The report recommends a massive public information and training program to address the public's indifference to the civil defense procedures that will most likely become a "future way of life." Based on its assessment of ongoing military tensions with the Soviet Union, the report asserts that the entire edifice of Cold War national security rests on the psychological fortitude of the U.S. civilian population. Thus the problem of a panic-prone public is oddly coupled with the problem of public apathy; both problems can be solved by an extensive campaign of information, education, and training. The campaign must communicate that national defense today "transcends the military's ability and responsibility" and depends equally on citizens' capacity for self-help and self-defense.<sup>65</sup>

*Report of the Project East River* becomes known as "the Bible of civil defense."<sup>66</sup> Collectively authored by Associated Universities, Inc., a Cold War think tank organized by a consortium of elite universities under contract with the U.S. Army Signal Corps, the report draws on the expertise of sociologists, psychologists, engineers, physicists, economists, public relations personnel, and leading educators. In preparing their report, the project's researchers also consult with the Psychological Strategy Board, an agency established by secret presidential directive in 1951 and charged with the task of designing "psychological operations" against enemies, including the dissemination of propaganda and planning of psychological warfare.<sup>67</sup> The historian Guy Oakes suggests that the public information campaign outlined in the report retools the psychological strategies and propaganda techniques aimed at adversaries abroad for use as "emotional management techniques for psychologically manipulating" the U.S. public at home.<sup>68</sup> A "home" now recognized by U.S. government

planners as a perpetually militarized terrain of total war. Or total defense? These two concepts themselves become conflated in the psychic confusions of aggressor and victim, attack and protection, total invulnerability and total panic. While U.S. leaders consistently portray the Soviet Union and the Communist threat as the aggressive forces ready to target civilian populations as atomic ground zero, such a portrayal permits U.S. decision makers the strange freedom to engage in domestic psychological warfare that targets a dangerously indifferent U.S. public.<sup>69</sup>

And so the management of nuclear fear—the dangers both of its excess (the chaos of panic) and of its absence (the unpreparedness of apathy)—becomes a primary goal of the institutionalization of civilian self-defense.<sup>70</sup> In the project's plan for an informed public inoculated against the dangers of mass panic, the encouragement of individual and group fear is acknowledged as a necessary civil defense strategy. Under conditions of atomic threat, the difference between national security and national fear is set spinning: national security is national fear; a nation without fear of atomic annihilation is a nation without security. "Panic Prevention and Control," a fifteen-page appendix to *Report of the Project East River*, distinguishes between panic behavior, an "untoward mass reaction" characterized by "aimless, unorganized, unreasoning, nonconstructive activity," and fear, a "normal response to danger," which can be "channeled" usefully into effective "combat" behavior.<sup>71</sup> Fear presents an opportunity for the emergence of organized behavior that can confront and reduce the danger of panic. The key to panic control rests "in the effort to channel crowd behavior in an organized direction." The surest prevention against panic, for civilians as for combat soldiers, is the "implanting of habitual . . . responses" to danger situations, a goal that can be achieved only by intensively training the public in proper behavior in emergency situations; the most effective training situation, for the public as for combat troops, is one that uses "every approach toward realism." The report's authors recommend "human laboratory situations" as a useful setting for analyzing panic, this "otherwise unmanageable social phenomenon."<sup>72</sup>

Now it's 1955. The byline reads "Survival City, Nev.," and the article narrates the highlights of the first atomic bomb dropped on a "typical" U.S. town.<sup>73</sup> Part laboratory experiment, part reality, part mass-mediated

spectacle, the incendiary fate of Survival City is broadcast live on CBS and NBC-TV to an estimated audience of 100 million viewers who tune in to watch the blast on May 5, 1955. The climactic televising of the explosion is preceded by two weeks of live telecasts three times daily from the test site.<sup>74</sup> The town, composed of ten brick houses and several prefabricated industrial buildings, is built and bombed to test the effectiveness of civil defense procedures during an atomic attack. Of the five hundred witnesses to the explosion in the Nevada desert, two hundred are civil defense personnel who participate in a series of field exercises in the "exposed area" after the explosion. A group of civilians experience the blast from a trench only 10,500 feet from ground zero, demonstrating "that civil defenders can take it along with the troops." Designed to demonstrate the ferocity of atomic power, and, in the FCDA's words, to bring "vast numbers of Americans face to face with the enormity of the problem of survival in the nuclear age," the atomic test is jointly sponsored by the FCDA, the Atomic Energy Commission (AEC), and private industry.<sup>75</sup> Over 450 members of the press, including radio, television, and newsreel reporters, are stationed eight miles from ground zero on "Media Hill." An unnamed "pretty girl" carries out televised interviews with the city's "survivors"—an array of human-size mannequins placed throughout the test site—before and after the explosion.<sup>76</sup>

The experiment at Survival City, code named Operation Cue, is a follow-up to Operation Doorstep, conducted in March 1953, when an atomic bomb is dropped in the desert to test the blast, radiation, and shock wave effects on two frame houses inhabited by human mannequins—some seated at the dinner table or in the living room in front of the television. The bomb's effects on automobiles, U.S. Postal Service trucks, and underground shelters is also measured. A survey conducted after Operation Doorstep indicates that 70 percent of the public becomes knowledgeable about the government's atomic experiments as a result of the well-publicized event. FCDA officials in 1953 credit Operation Doorstep with doing more to "promote knowledge of self-protection and civil defense" than any other event that year.<sup>77</sup>

I don't remember the code names, the dates, the data, their findings, but without a doubt it was operating at my doorstep, on cue and in front of the local cameras. I remember the mangled plastic of neatly dressed

mannequins, the time-series still photos of that experimental white two-story house going up in flames, then flattened by some storm rushing out from inside, simultaneously buckling in from an invisible force without. I wasn't yet born in 1955. But the state-sponsored campaign to compress an unthinkable atomic future into the thinkable present, to operationalize, in the time span of a few seconds and on the scale of a sixteen-inch TV screen, the apocalypse from which the state offered no defense but one's own "self"-protection — no protection but the state's solemn, spectacular, electronically broadcast witness to the fantastic destruction of a test-tube U.S. town — reached forward into my history before I had one and planted a few . . . perceptions. Even in here, especially in here, I sense how the future can sometimes already have happened. How it can arrive, already over, on your doorstep, an anticipated terror that has already taken place on some strangely choreographed cue. As the child of federally administrated time warps, born into a future already compressed into yesterday's experimental lab — "Tomorrow Today!" exclaims a series of fifteen-minute made-for-TV FCDA films<sup>78</sup> — there isn't much to do in this crazy place but carefully reinvent the psychodramas of such a disordered past. Cautiously reconstruct the social *illogics* of such an elusive history. That's really what I'm doing here, I think, in the subterranean shelter of a perpetually breachable self-defense.

At night, they tell me, I have bad dreams, tossing against sleep, mumbling outside consciousness. But sometimes I suspect I'm just seeing newsreels of my future, already running past. A future fast-tracked on an imaginary six-lane interstate highway, built for a mass evacuation that is not yet over.<sup>79</sup>

#### MACHINE ELECTRIC

We have imposed on the human being, and on our psychological studies of him, the paradigm of communication engineering. This is quite useful. . . . If you have a situation where a human being is acting as a communication system, then he must obey the same laws that govern all communication systems, just as he must obey the law of gravitation. —GEORGE A. MILLER, "Communication and the Information Theory," *Panic and Morale: Conference Transactions*<sup>80</sup>

The fact that we cannot telegraph the pattern of a man from one place to another is probably due to technical difficulties. . . . It is not due to any impossibility of the idea. —NORBERT WIENER, *Human Use of Human Beings*<sup>81</sup>

The first interdisciplinary conference on "Morale and the Prevention and Control of Panic" is held in February 1951 in New York City; a follow-up conference takes place in November 1954. The meetings are jointly sponsored by the Josiah Macy Jr. Foundation and the New York Academy of Medicine. Drawing together over fifty participants from medicine, psychiatry, civil defense, sociology, the radio and television industry, psychology, public health, and political science, the conference organizers hope to set future directions for research and action on the problems of panic and morale. Critical of the "fear technique" to which the nation has been exposed, conference organizers encourage "teams of social scientists and other leaders who have knowledge of human behavior" to participate in designing programs that will be "morale-building rather than panic-building."<sup>82</sup>

The conference meetings on morale and panic are two among nearly two hundred conferences sponsored by the Macy Foundation in pursuit of its founding mission: to promote scientific investigations into "fundamental aspects" of health and disease, especially problems falling "between the sciences" in the borderlands of the medical and the social.<sup>83</sup> Launched in 1930 with funds from the Macy family business in shipping and oil (where the Macys were occasional partners with the Rockefeller family enterprise), the Macy Foundation's philanthropic activities during World War II focus on health issues central to national defense.<sup>84</sup> The relatively new concept of an interdisciplinary and informal "conference technique," first initiated by the Rockefeller Foundation in 1936, becomes the postwar model for Macy-sponsored gatherings as the foundation continues its close partnership with U.S. government officials and research agendas.<sup>85</sup>

The 1954 conference on morale and panic exemplifies the foundation's commitment to bring together a cross-disciplinary array of professionals in academia, government, industry, and medicine to focus on a theoretical and practical problem in the "psycho-social" field.<sup>86</sup> Staging

the problem of morale in relation to panic—that is, “good morale impedes panic, and . . . poor or bad morale favors it”—the conference addresses several basic questions: What is morale? By what criteria can it be measured? And how can good morale be fostered and bad morale improved?<sup>87</sup> Under the guidance of Dr. Frank Fremont-Smith, the director of the Macy Foundation’s medical division, preparations for the 1954 conference include three separate miniconferences in Chicago, Boston, and Washington, each devoted to discussions by “specialists” of the proposed definition of morale.<sup>88</sup>

But the most extensive intellectual orientation for the 1954 conference is the one formal presentation during the two-day meeting, an opening address entitled “Communication and the Information Theory” delivered by George Miller of Harvard’s Psycho-Acoustic Laboratory.<sup>89</sup> Miller’s focus on communication and information theory is tied to the definition of morale proposed by Dr. Iago Galdston, a psychiatrist and representative of the New York Academy of Medicine, at both the 1951 and 1954 conferences. Conceiving of morale not as a “thing” in itself but as a feature or quality of behavior that can be judged against a “prototype pattern” of development, Galdston suggests that group morale might profitably be defined “in terms of behavior involved in the achievement of prototype group goal patterns.”<sup>90</sup> Good morale—behavior aimed at achieving prototype goal patterns—can be promoted through communication, he hypothesizes. More specifically, a broad spectrum of communication may ensure the individual’s successful orientation toward “his reality situation,” where the “breadth of the communication spectrum makes possible a multi-phased, integrated appreciation of the reality.”<sup>91</sup> Is it possible, Galdston asks, that the “breadth of the spectrum of information” is the key to good morale?

Miller’s presentation hopes to give conference participants a more confident grasp of “the state of the art in communication” as seen from a contemporary engineering perspective, and to encourage the application of communication and information theory to the problem of morale.<sup>92</sup> During World War II, Miller worked in the Psycho-Acoustic Laboratory at Harvard University on the wartime problem of jamming enemy voice communications, experimenting with a variety of interference patterns that could disrupt a listener’s understanding of the main signal in a

radio communication.<sup>93</sup> As an experimental center for the emerging science of psycholinguistics, the Psycho-Acoustic Lab tackled the problem of “noise control” in military communication systems partially through a close alliance with research personnel and experimental techniques developed at Bell Telephone Laboratories, with whom the Psycho-Acoustic Lab maintains important postwar institutional relations.<sup>94</sup>

Beginning with a diagram of a “generalized communication system” that traces the flow of information from source to channel to destination, and highlighting the ever-present danger of system disruption by noise, Miller suggests that both human and machine communication can be understood through this simplified model. Recent advances in the mathematical theory of communication, made possible by Claude Shannon’s research at Bell Labs and Norbert Wiener’s convergent work at the Massachusetts Institute of Technology, have led to statistical and probabilistic methods for quantifying the amount of information passing through a communication system. For a company like Bell Labs, where Shannon developed his theory of information in 1949, the ability to measure the amount of information carried in a signal means the ability to more precisely and economically design the channel capacity (for example, the telephone wire) to fit the amount of information traveling through it.<sup>95</sup>

The statistical and probabilistic methods formulated at Bell Laboratories for quantifying information begin with the assumption that information is wanted for making a decision, for selecting one choice among a variety of possible options. Information, Miller explains, permits the receiver to “reduce the range of possible alternatives” in the selection of a desired outcome, or goal.<sup>96</sup> One “unit” or “bit” of information is arbitrarily defined as the amount of information needed to reduce by half the possible choices that could lead to the desired goal. Information, then, is a quantified measure of the present path to future outcomes.

In applying this model of a communication system to human social interactions, Miller makes clear that humans can occupy any of the three positions in the flow of information: source (input), channel (transmission), or destination (output). But it is primarily the positioning of humans as information “channels” that interests Miller as he suggests how the communication engineer might contribute to the social engi-

neering of good morale. Drawing on the findings of recent work in experimental psychology, Miller reports that humans have been found to have a quite limited "channel capacity" for transmitting information. Experiments at "putting information into a person" demonstrate that humans tend toward a channel capacity of approximately 2.5 units or bits of information, far inferior to the transmission capabilities of a thin copper wire. Beyond this limit, humans begin to introduce noise into the communication system, resulting in system "errors," that is, a lack of correlation between the input and output signals. In contrast to a telephone (at one thousand bits per second), or a television set (at millions of bits per second), humans appear to be designed with a maximum channel capacity of twenty-five bits per second.<sup>97</sup>

However, turning from the amount of information to the breadth or spectrum of information humans can handle, Miller reports on "laboratory measurements" indicating that a human being is a highly developed "multi-channel information-processing system" capable of effectively handling many different inputs and many different outputs at once. That is, our communicative strength lies in our ability to handle a multiplicity of information; we are well designed to handle simultaneously several different information channels. Based on measurements of the number of different channels needed to process human language, linguists estimate that humans can handle up to nine or ten channels at one time. For the communications engineer trying to maximize morale, this means that "you don't want to give a person a lot of information of any one particular kind. If you want to use him effectively, you have to give him a lot of different kinds of information."<sup>98</sup> Miller concludes that Galdston's suggestion that good morale demands a wide spectrum of information may well be correct.

For conference participants, Miller's introductory remarks provide a frame of reference and a set of analogies for thinking about the problem of morale in both individuals and groups. Indeed, the difference between the group and individual begins to blur as both are conceived, in parallel fashion, as communication systems—producing, transmitting, and receiving information through intrapsychic or interpersonal processes. As the psychiatrist Roy Grinker remarks during the conference proceedings, the possibility may exist of a general frame of refer-

ence or common language for viewing any "system."<sup>99</sup> In such a general systems approach, Grinker explains, the concepts used in sociological and psychodynamic language become interchangeable. The language of interacting, integrated systems offers, he suggests, a bridge between the scientific discourses of separate disciplines:

I think that we are at a stage in science where the disciplines are touching each other at their boundaries, that the ways in which we are viewing one system or another are very similar, and that we are developing . . . *general concepts which are applicable to multiple systems*. Morale . . . is a concept which is applicable whether it be in relation to coordinated somatic functions, the development of integrative personality or social cohesiveness, or even, I think one could imagine, a world order. They are of the same nature of events.<sup>100</sup>

Grinker's dream of a common language traversing the systematic scientific discourses of somatic function, personality, society, or even world order is not an individualized fantasy or pursuit. Indeed, one "goal pattern" of the group of Macy-sponsored conferences, and several of its key participants, is to establish a shared set of concepts, models, or methods across the disparate social, psychological, life, and medical sciences.

The language of communication and information theory introduced at the conference on panic and morale is in fact borrowed from the most ambitious and far-reaching conference program sponsored by Macy from 1946 to 1953: a series of ten interdisciplinary meetings on the new field of cybernetics.<sup>101</sup> The cybernetics conferences overlap in both time and intellectual focus with the 1951 and 1954 conferences on panic and morale. Cybernetics (from the Greek *kybernetes*, meaning pilot or governor) emerges out of the Macy conferences as a new cross-disciplinary subfield devoted to understanding communication and information feedback as the main control techniques in a range of self-regulating "systems."<sup>102</sup>

Cybernetics is an interdisciplinary science of control through communication; its etymological tie to practices of governing is extended through the Macy conferences into shared conceptualizations of "control" in the physiological, engineering, and social sciences. The first cybernetics conference in March 1946 opens with two presentations: one by an experimental neurobiologist on the electrical properties of nerve

cells, the other by a mathematician working at Princeton on the design of the first electronic computing machine. Together they introduce the productive analogy between the electrical operations of the human nervous system and the general purpose computer—an analogy that dominates participants' discussions throughout the cybernetics conferences.<sup>103</sup> The disciplinary fields represented by participants in the cybernetics meetings include electrical engineering, mathematics, chemistry, psychiatry, neurology, biology, physiology, zoology, anatomy, sociology, anthropology, psychology, economics, and philosophy. From the social sciences, attendees at the first meeting are Paul Lazarsfeld (sociologist and director of the Columbia Bureau of Applied Social Research), Kurt Lewin (social psychologist and director of MIT's Research Center for Group Dynamics), Margaret Mead (anthropologist), Gregory Bateson (anthropologist), and Heinrich Kluver (experimental psychologist, University of Chicago).<sup>104</sup>

The cybernetic perception of the human nervous system as an electrical machine, and of the computing machine as a network of interacting neurons, is staged by a seminal 1943 essay in the prehistory of cybernetic thought, coauthored by Arturo Rosenblueth (a neurobiologist), Julian Bigelow (an engineer), and Norbert Wiener (a mathematician).<sup>105</sup> The three men become Macy conference participants and core members of the founding group of cyberneticians. Their short essay argues that certain activities of machines and of humans can together be classified as goal-seeking behavior, in which achieving a future goal depends on "feedback" between that future goal and the current behavior of the machine—or human—system. Three of the fundamental features of cybernetic techniques are introduced in this modest essay: first, the analogy between the behavior of machines and humans; second, the grounding of that analogy in metaphors of communication between goals and behavior directed toward those goals; and third, the insistence on circular causality, or the feedback between causes and effects in mutually influencing circuits of communication.<sup>106</sup>

The arguments set forth in the 1943 essay have their conceptual and material origins in the military work conducted by Wiener and Bigelow during World War II. In his widely read book *Cybernetics, or Control and Communication in the Animal and the Machine* (1948), Norbert

Wiener, recognized as a founding intellectual figure of the new subfield, recounts how the basic insights of cybernetics emerged out of the engineering problems encountered in the wartime effort to build a more effective control apparatus for antiaircraft artillery.<sup>107</sup> The technical and strategic problem of how to better shoot down German bomber planes—which, together with the development of atomic weapons, became the two most sophisticated U.S. scientific projects during World War II—involved thinking of the firing gun, the pilot, the moving plane, a moving target, moving machines, and the movements of men as components of a single system. The goal of the system is to accurately target and gun down a moving aerial enemy armed with a lethal bomb. The mathematical problem that Wiener attacked and solved was how to predict, as he explains, "the future of a curve," that is, how to make a statistical prediction, based on incomplete information about the target's pattern of movement, of the target's future location and course so as to improve the control of antiaircraft fire and increase its chances of hitting the enemy target. Wiener's mathematical theory uses statistics to predict the future of a curvilinear flight pattern, based on information from the past (i.e., the behavior of the plane). The materialization of this prediction in the control apparatus of the antiaircraft artillery system involves the problem of negative feedback between radar information and the adjustment of gun controls. The behavior of humans in the fire-control apparatus, according to Wiener, needs to be "incorporate[d] . . . mathematically into the machines they control."<sup>108</sup>

The "new and fundamental revolution in technique" achieved by cybernetics models the multiple, heterogeneous actors in a system (machines, information, humans, electricity) as controlled and controlling via communicative feedback.<sup>109</sup> In *The Human Use of Human Beings: Cybernetics and Society* (1950), his second book written for an educated, nonspecialist readership, Wiener asks, "What then is this communication, which is so human and so essential?" Communication, he explains, is composed of patterns, an ordered arrangement of elements in which "the order of the elements" is the definitive feature, and not "the intrinsic nature of these elements."<sup>110</sup> Communication is tied to the formal, structural properties, or pattern, of things and relationships, and not to their materiality. Considering the human individual as "something which has



to do with continuity of pattern, and consequently with something that shares the nature of communication," Wiener speculates in the chapter entitled "The Individual as the Word" that the fundamental identity of the individual body rests not in a physical continuity of matter but in a continuity of patterned processes, a continuity or identity that can, like an electronic code, be transmitted through a communicative channel: "There is no fundamental absolute line between the types of transmission which we can use for sending a telegram from country to country and the types of transmission which at least are theoretically possible for a living organism such as a human being."<sup>111</sup>

The science of cybernetics, Wiener summarizes, is the study of messages, particularly the "effective messages of control," where control operates as "the sending of messages which effectively change the behavior of the recipient." A message is the particular type of pattern in which information is transmitted; it is a "transmitted pattern." The study of society, he concludes, can only be understood as the study of "the messages and the communication facilities which belong to it," specifically the "messages between man and machines, between machine and man, and between machine and machine." The study of these messages in society would then also be the study of the control of humans and machines through the messages, or "transmitted patterns," that direct or redirect their behavior.<sup>112</sup>

I think that's the kind of study I'm doing here. It's a cybernetic approach, really. Trying to hear the patterns, assess the formal properties, of the messages transmitted among this group of mostly men who gather with intensity, liberal tolerance, and philanthropic funding sometime after Hiroshima, before Cambodia, to predict the future curves of knowledge systems gone to war and never quite come back. Total war. Total defense. Total (social) science. This cross-disciplining desire for total systems. For a mathematically precise probability that if the defensive gestures of a moving enemy and its evasive but not random curves of flight are electronically recorded on a radar screen and subjected to a set of statistical runs producing information for transmittal to the gun control apparatus aiming with a minimalized margin of error at the future of that enemy's flight through space in time then the system will achieve its goal,

behave with purpose, penetrate the most intricate defense. The message will be—delivered.

The 1954 Macy conference on morale and panic is a choreographed attempt to introduce the central concepts of a cybernetic model of communication systems to an elite group of social scientists. The Macy Foundation, operating itself as a kind of communications device and aware of its own conference program "as the most persistent and wide-ranging effort to promote cross-discipline communication in the USA,"<sup>113</sup> is experimenting with cybernetics as an effective, multidisciplinary, "total" language for understanding social problems and engineering their solution. The cybernetic approach has all the attractions of a simplified behaviorism, with its focus on input-output processes and the measurable, observable features of behavior. But it also incorporates into its model the potential complexities, or psychological processes, of behaviorism's blank, black box—the "channel" in the cybernetic communication system has properties of its own that should be investigated so as to be successfully used.<sup>114</sup>

The informal discussions constituting the bulk of the 1954 conference on panic and morale revolve largely around the perceptual operations of the transmission channel—understood as either the individual or the group—for morale behavior. Galdston's hypothesis that a broad spectrum of communication flowing through the human channel increases awareness of reality, reduces the dangers of panic, and "facilitates effective behavior, which in turn enhances morale," is met with a disparate chorus of responses.<sup>115</sup> Some are concerned with the psychodynamic problem of "noise" generated in early mother-child relations; many raise questions of where or how the "meaning" of information fits into individual or group morale patterns; and several object to the lack of attention to social values that prescribe certain behaviors as "good" morale and others as "bad." But the terms of the conversation are largely set by the conceptual parameters of communication and information models. The messages promoting a cybernetic approach to social problems are suggestively transmitted through the influential Cold War channels of intellectual and institutional communication assembled by the philanthropic reach of the Macy Foundation.

*Basic Law of Morale:* "The Individual Must Feel That He Is Participating in His Own Destiny." He must feel that he is voluntarily pursuing his own goals. . . . [I]f the citizen feels that the objectives of the government are essentially the objectives that he himself desires, if they arouse his hopes and therefor his voluntary cooperation, he will feel identified with the enterprise—with civil defense—and will aid it to the best of his ability.—Office of Civil Defense<sup>116</sup>

"Test Yourself," the headline reads, "How Panic-Proof Are You?" The two-page self-test in the August 1953 issue of the popular *Collier's* magazine shows five large boxes, each containing survey questions or tests of behavior for predicting your susceptibility to panic. "How do you feel when: . . . You are alone and your doorbell and telephone ring simultaneously?" Check one: "I'm not bothered." "I become tense." "I blow up." — "Extend one arm, holding a heavy book. . . . Now count the words in this paragraph." — "Set an alarm clock ringing continuously on the table near you. Then count the crosses in the circle without using a pencil to assist you." — "Time yourself on this test. How long does it take you to place a dot at the center of each of the zeros below?" (360 tiny zeros are drawn beneath). Numerical instructions are included for scoring your individual "panic rating." If your final score is under 50, you are likely to panic. From 70 to 90, you're "panic-resistant." Above 90, "you're as close to being panic-proof as a human can be."<sup>117</sup>

The self-test is part of a longer feature article titled "Panic, the Ultimate Weapon?" written by Val Peterson, director of the FCDA. In keeping with civil defense theory of the time, Peterson, after describing the apocalyptic aftermath of an atomic blast over Main Street — "The heart of your community is a smoke-filled desolation rimmed by fires" — warns of the dramatic threat that panic presents to U.S. national security: "On your actions may depend not only your life and the lives of countless others, but your country's victory or defeat, and the survival of everything you hold dear. Ninety per cent of all emergency measures after an atomic blast will depend on the prevention of panic among the survivors in the first 90 seconds. . . . If there is an ultimate weapon, it may well be mass panic—

not the A-bomb."<sup>118</sup> Announcing that the fundamental fact of the atomic era is that "we, the citizens of the strongest nation on earth, are also the most panic-prone," Peterson discloses the recent findings from important panic research. One "highly classified nonprofit organization in the West," which has conducted "panic-probing experiments all over the nation" and shared its findings with U.S. federal agencies, speculates on the possibility of developing chemical agents that can decrease panic susceptibility. Other "Western researchers" have devised animal experiments involving the application of 70,000 volts of "harmless but spectacular" high-frequency electricity to a laboratory mouse, exciting inch-long blue sparks from each hair on its body. Most mice, although not physically injured, go mad from the experiments — although a few exceptional rodents kept calm and "in successive tests actually began to enjoy the experience." Although unclear how these findings might apply to humans, "tests have shown" that the cowboy of the Western high plains is, like the occasional mouse and the entire species of snowy owls, unusually impervious to panic. Due perhaps to the calm woven into life in "vast lonely spaces."<sup>119</sup>

The article ends with Peterson's confident summary of the panic-prevention steps successfully implemented by the FCDA. The installation of "broad emergency information facilities," achieved through the cooperation of the government and the broadcast industry, has set into operation CONELRAD, the code name for a new system of radio emergency broadcasting providing a "sure, instant channel of information from defense officials to the public anywhere in the country." The essential facts of the situation can now be broadcast within minutes after an attack warning, and the president of the United States is now able to address from a single microphone every live radio set in the country. With the "information media" recognizing their own critical role in national survival, Peterson concludes, "we can go a long way in licking the psychological impact of an enemy attack," preventing panic and "maintaining morale" by transmitting the facts to a concerned public.<sup>120</sup>

And tell me, my lonesome cowboy, whatever do you think they did with the mice who went mad? More tests? On the temperature, the transient electrochemical states, the neural architectures of wild bewilder-

ment? Of dumb, live-wired, animal intelligence electrified beyond a safe return by the harmless if spectacular blue jolt of scientific inquiry?

And where are you now, my sweet cowboy? With calm arms outstretched can you hold me, trembling, here in this place? Far from your Western plateaus. Beyond the stoic watch of the snowy owl. I'm caught here, and with calculation, in this abstract place of panic proneness, in the vast lonely spaces of this deserted classification, of this continuously timed self-test that I'm failing my outstretched arm holding a book counting the words in this paragraph drawing a dot in the center of 360 tiny circles with an alarm clock sounding endlessly on a table nearby while somebody's knocking at that door as the telephone starts ringing and I tell you, my darling, I am feeling—a little tense.

By 1956, the FCDA recognizes that the facts of the potential attack situation facing the United States in the atomic era have become acutely disturbing. With the advent of the hydrogen bomb—capable of exponentially greater mass destruction, especially through radioactive fallout, than a “conventional” atomic bomb—and the development of guided intercontinental ballistic missiles just over the horizon, the warning time for attack and the threatened destruction from an all-out atomic airstrike reach almost unimaginable dimensions. Civil defense planning assumptions spelled out by the FCDA in its 1956 annual report include the following: (1) the enemy's initial attack will attempt “a knockout blow” relying primarily on nuclear weapons, but most likely also involving chemical and biological weaponry; (2) the attack will target U.S. military, civilian, and industrial areas (187 probable targets are listed, including every significantly populated metropolitan area and all state capitals); (3) warning time for cities on the Atlantic coast will be from one to three hours; and (4) radioactive fallout from a large-scale mass attack will cover vast areas of the United States and could affect any region.<sup>121</sup> In light of the rapid increase in the size and destructive force of nuclear arsenals and the rapid decrease in delivery times made possible by new aerospace technologies, the FCDA calls for a “modernization” of its civil defense organization. As part of a \$1.9 million annual budget for research and development, the FCDA provides more than \$200,000 to corporations and research institutes for the development of a “home warning device” to alert residents

of nuclear attack, as well as funding for the National Opinion Research Center (NORC) to improve techniques for disseminating civil defense information through the mass media, a grant to Group Attitudes, Inc., to evaluate the effectiveness of civil defense public information campaigns, and a renewal of the ongoing contract with the University of Michigan's Survey Research Center to continue attitude surveys on current public thinking about civil defense.<sup>122</sup>

The alarming “facts” of nuclear threat and civilian survival continue in 1956 to be circulated in an array of dramatized forms, with over twenty-two motion pictures (most of them cleared for television airing) available for showing in schools, civic organizations, and churches.<sup>123</sup> One of the films, *Operation Ivy*, documents the secret military operation carried out in the Marshall Islands on November 1, 1952, when the United States detonates its first hydrogen bomb, producing the largest nuclear fireball in history. Kept an official secret from the U.S. public for a year and a half—while rumors of the operation and its filmed version circulated widely—the H-bomb is introduced to the public via a televised broadcast of *Operation Ivy* aired in April 1954. The top-secret film is originally screened for a select audience composed of President Eisenhower, his cabinet, and the Joint Chiefs of Staff, who view it at the White House in June 1953.<sup>124</sup>

The film shows the sensational atomic fireball rising out of the sea and the shock waves rushing across the ocean surface. An enormous mushroom cloud darkens the sky. Superimposed against the horizon of flame is a replica of Manhattan's skyline: “The fireball alone,” the film narrates, “would engulf about one-quarter of the island of Manhattan.” In National Security Council meetings, where the public release of the film is contentiously debated in early 1954, rationales for distributing the documentary veer from the plea by the FCDA director Val Peterson for something that could “scare the American people out of their indifference” to President Eisenhower's vehement critique of fear tactics and his pronouncement that the film should be shown only if it offered “real and substantial knowledge to the people.” For one reason or the other or perhaps both, *Operation Ivy* is released on April 2, 1954, and is broadcast repeatedly over television stations throughout the day. In the FCDA media package accompanying the film's release, Peterson emphasizes both the phenomenal

power of the new weapon with its spectacular visual effects, and the capacity of current civil defense strategies to absorb the new threat without major changes.<sup>125</sup>

Testing. Eins. Zwei. Drei. Testing. Can you hear me? Are we communicating yet? Is the connection holding?

*Alert Today—Alive Tomorrow*, a film produced for the FCDA in 1956, portrays the unchanging civil defense response to the changing strategic landscape of nuclear attack.<sup>126</sup> The choreographed documentary opens with the halcyon scene of a “typical” U.S. town, with tidy streets, single-story brick houses, freshly mowed lawns, and well-behaved children. The camera records the friendly routines of suburban white men doing yard-work on a sunny Saturday afternoon, suburban white women chatting as they hang the laundry out to dry. On a street in downtown Reading, a mother and her two children stroll down the sidewalk. The young girl, wearing summer shorts and horn-rim glasses, turns to look in a shop window filled with well-dressed mannequins. But a poster in the window catches her eye: “Civilians Can Be Bombed!” Close-up shot on the young girl’s face, bewildered.

The town is Reading, Pennsylvania. The stars of the film are the eight thousand community volunteers who compose the well-prepared civil defense organization pictured in its myriad functions: auxiliary fire and police departments, volunteer ambulance units. Reading displays its riches of trained citizens willing and able to load, transport, unload, and assemble a two-hundred-bed emergency hospital. Middle-aged housewives wearing white jumpsuits and helmets practice emergency procedures in an all-female volunteer rescue team—running into burning buildings, working the pulley system that sends “victims” strapped neatly onto stretchers out of smoking windows to safety below.

At the firing range of the Reading Pistol Club, members of the auxiliary citizen police corps watch patiently as the instructor demonstrates how to properly aim and fire a revolver at a distant target. Each of the white-suited volunteers then takes a turn with the gun. In the event of atomic attack, who will be the actual targets of the volunteer civil defense militia? The announcer explains that with their civil defense training at the Reading Pistol Club, citizens will be prepared to “check possible panic” in the chaotic aftermath, contributing a “strong stabilizing effect on the

Watching the Cold War.  
RKO/Federal Civil  
Defense Administra-  
tion, *Alert Today—  
Alive Tomorrow*, 1956.

jittery populace.”<sup>127</sup> Panic-resistant citizens, bearing down in white jumpsuits and belted guns, under the voluntary burdens of national defense. A bleak future, armed and ready, advancing toward the pretested and perhaps less voluntary corps of the panic prone.

#### IN SUBURBAN HOUSES

Daddy was a navy frogman. Ocean. Motion. Off the coast of Southern California in the late 1950s, he was trained to detonate and defuse underwater explosives. In a manner of speaking, then, I was born out of the belly of my mother into the belly of the U.S. military. Sunlight. Dynamite. When we moved in 1962 from the small island that served as a military training base for the U.S. Navy to the suburbs of Reading, Pennsylvania, my parents bought their first house with a loan furnished through the GI bill. Daddy’s job as an engineer was made possible by a master’s degree in physics that he earned on the GI bill’s education program. These’re different ways that I interpret the meaning of the Cold War.

(I wake in the dark of this place, my head banging with dream quickly escaping. Hands search blind for a pen, some paper. I write, I WANT TO KNOW—IS IT POSSIBLE TO WRITE IN THE DARK? IS IT POSSIBLE TO WRITE IN THIS DARK? I WANT TO WRITE IN THE DARK.)

I turn on the light—to find the lines, some rope of words to pull me through. Strung taut between dreaming and wake. And why do I wake?

What causes me to wake now so often near four A.M.? My brain sucked in a syncopated rhythm of memory, meaning, darkness, meaning. Memory. I remember. Under the bed in the dark four A.M. and in hiding as Daddy grabs her neck. He is naked, she in a soft nylon gown. They have been to the annual Firemen's Ball, for the Reading Volunteer Fire Corps, come home late and well drunk. Mama nylon across the bed and he naked choking her, collared at the throat, he softly speaking such language, "bitch," he whispers hot and her head hanging off the bed, at the edges. I am under the bed four A.M. in the dark and in hiding and WHY DON'T I STOP HIM? Mama, do I try?

Such a scene playing out across these white sheets—Mama's head on the edge—returned from the Reading Firemen's Ball and well drunk, her head hanging at the edges and his hands on her throat binding. (Breath.) He has collared her, the blood must be gathering in her brain round her edges drunk with the fireman, their many balls, such dancing. (Death.) She must be at the water's edge going to liquid as he collars her, bitch, he naked against her nylon. What boiled in your brain, Mama, what tale to tell if we ease up the bindings, a bloodletting, what flow Mama of words, no words, tears, no tears, what a bloodletting of your brain that burned after the Firemen's Ball as his fingers pressed your borders. Your waters flowing. What do you know Mama? With what binding does your brain blood boil?

Dear Mama, I don't know if I stopped him. I think I stood there in the darkness of the mid-1960s, unblinking. But I do know now you stop me, remind me never to die for his delight. Quite a binding! It makes my blood boil. But how do I move Mama, feet tied again to mud and dancing on some other grounds? How do we let the blood boiling in these hot brains? I don't wanna die for his delight but I will burn if need be for mine. Where is our delight, Mama, what blood flows us toward other borders? Tell me Mama, I'm under the bed four A.M. and in hiding, listening for the next lines, a rope of words, a knotted sheet thrown to me. We are at a watery edge, Mama, and ghosts calling us under and down, ghosts calling my name, bitch, going under. How do we flow toward other edges, toward our delight, Mama, in this dark and you on your back and back from the Firemen's Ball and me under the bed in the dark again and burning

mama where is delight  
and how do we write  
where is de light  
how do we write in such a dark, mama,  
such a dark mama four A.M. dream?

#### FATHER THOUGHT IT WAS CLEAR

The father symbol everywhere [is] the one who must be and, apart from clearly neurotic cases, to some extent genuinely is respected. . . . At the same time there is an ambivalent undercurrent in the attitudes toward such figures which on occasion may come to the centre of the stage. —TALCOTT PARSONS<sup>128</sup>

Daddy, I have had to kill you. —SYLVIA PLATH<sup>129</sup>

Talcott Parsons is not an empirical sociologist. But his career as a preeminent sociological theorist in the United States, where his reputation and influence peak by the early 1960s, is explicitly committed to the development of a logically adequate, internally consistent and coherent system of social theory that can guide the selection and interpretation of empirical facts. For Parsons, the mutual interdependence of "empirical interpretations of society" and the "structure of theoretical systems" constitutes the necessary foundation for a verifiable science of society. In the pursuit of a scientific theory of society—that is, "a body of logically interrelated 'general concepts' of empirical reference"—theory itself can operate as an "independent variable" in the development of science; theory has the potential power to determine what "facts will be discovered" and what directions will be taken by the "scientific investigation" of the social.<sup>130</sup> The attempt to wield such determinant power is perhaps one animating motive for Parsons's considerable body of theoretical work, spanning more than five decades of writing and teaching.

While Parsons's theoretical system loses its hegemonic hold on the disciplining of sociologists by the late 1960s, it is still recognized today as, in the words of Jeffrey Alexander, a "permanent contribution to social thought," particularly the unparalleled achievement of Parsons's "clarify-