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Radiating Emergency: The Perils and Promise of the Broadcast Signal in the Atomic Age

Greg Siegel

This essay argues that the development of CONELRAD marked a pivotal—and often overlooked—moment in the history of media and communications in the United States. As the nation's first coast-to-coast emergency broadcast system, CONELRAD established a new paradigm of networked communications for a new world order. Through close critical examination of the institutional events and discursive controversies surrounding CONELRAD's development, I show how those events and controversies were inflected by both contemporaneous atomic anxieties and older hopes and fears associated with over-the-air communications. I also suggest how they articulated, in the domain of electronic mass media, the politico-legal theory and practice of the state of exception.

Keywords: Cold War Civil Defense; CONELRAD; Electromagnetic Radiation; Emergency Broadcasting; State of Exception

In February 1963, *Popular Electronics* ran an article titled "Wanted: An Electronic Paul Revere," which began with these words:

> A frequent nightmare among Pentagon brass over the past decade has gone something like this: A missile comes streaking across the North Pole, a big red star painted on its side. Somewhere in America, a radio station operating in the "public service" is blaring rock-n-roll. Inside the missile, the guidance system is jumping happily to the music, using it to home in on a key US target. Suddenly, BOOM! The enemy warhead lands smack on the antenna site. And the Pentagon brass wakes up in a cold sweat.[1]

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A nightmare scenario of this sort did indeed haunt the Pentagon during the early years of the Cold War. The United States had been awakened to the terrible costs of an open and unguarded electromagnetic spectrum on December 7, 1941, when Japanese fighter pilots homed in on the AM signal from a local Honolulu radio station and proceeded to raid the US naval base at Pearl Harbor. From the perspective of the Department of Defense, the Soviet Union, armed since 1949 with atomic weaponry, had to be denied the ability to exploit the domestic airwaves in a similar manner. The specter of nuclear apocalypse meant that never again could the nation's frequencies be allowed to fall into the wrong hands.

On December 10, 1951—ten years to the week after the raid on Pearl Harbor and one year to the week since having proclaimed a state of emergency in connection with America's escalating military entanglement on the Korean Peninsula—President Harry S. Truman issued a little-noticed executive order. Prompted by a recent amendment to the "War Emergency—Powers of President" section of the Communications Act of 1934, the order charged the Federal Communications Commission (FCC), in coordination with the Defense Department and the National Security Resources Board, with the task of formulating a practicable strategy for the "emergency control over certain government and non-government stations engaged in radio communication or radio transmission of energy."[2] The resultant plan, unveiled to the public the following year, was named CONELRAD, an acronym for "*con*trol of *el*ectromagnetic *rad*iation."

The development of CONELRAD marked a key moment in the history of media and communications in the United States. As the nation's first coast-to-coast emergency broadcast system, CONELRAD established a new paradigm of networked communications for a new world order. Devised amid Cold War tensions and perceptions of looming catastrophe, the new paradigm, neither commercial nor conventionally governmental, challenged received understandings of what the radio medium could do, of what it should do, even of what it was in its very essence. It proved the etheric realm, though invisible, intangible, and extraterritorial, to be at once more vulnerable to foreign aggression and more useful for domestic protection than previously imagined. It radically called into question the broadcasting industry's relationship—and responsibility—to its audience, its sponsors, and its regulators. It revived and recontextualized old debates about control of the airwaves and freedom of the press, and, in effect, about the meaning of "the public interest, convenience and necessity,"[3] drastically raising the stakes in the process. It created extreme programming for implied listeners with extreme obligations (moral, attentional, civic, patriotic) in extreme circumstances. It blurred distinctions between public and private institutions, military and civilian technologies, media policy and national security, radio communication and radiation, and habits of tuning in and methods of surviving. A major component of civil defense in the Atomic Age, it made the containment of wireless signals a governmental priority and ascribed to the business of broadcasting an existential urgency.

In light of all this, it is strange that CONELRAD, which remained in operation for more than a decade, has received scant attention in standard histories of American

broadcasting.[4] (CONELRAD was replaced in 1963 by the Emergency Broadcast System, which was itself replaced in 1997 by the Emergency Alert System.) Such histories routinely underscore early radio's connection to technological catastrophes and states of emergency—most notably, the *Titanic* disaster, the *Hindenburg* explosion, and World Wars I and II. Yet they rarely mention the events and discourses surrounding the institutionalization of emergency broadcasting after 1945.

In minimizing or omitting the story of CONELRAD's origin, evolution, and legacy, most broadcasting histories have taken for granted the nature, and downplayed the significance, of emergency broadcasting's relation to non-emergency—that is, "normal"—broadcasting practices, policies, and political economies. In assuming instead of scrutinizing emergency broadcasting's anormality, its status as an "exception to the rule," these histories have elided not only its differential specificity but also its structural necessity, reproducing on a metahistorical level a set of limiting presuppositions and prejudices about broadcasting's social and institutional forms, functions, and spheres of relevance. In preoccupying themselves with broadcasting's articulation to ordinary governance and everyday commerce and culture, they have neglected, or at least not fully appreciated, the states of broadcast emergency that necessarily precondition and ultimately secure that governance, commerce, and culture. In elucidating broadcasting's alliance with the regular order, they have obscured the constitutive other that makes the regular broadcasting order possible in the first place. An instantiation, in the domain of electronic mass media, of the "state of exception"—whereby, as Giorgio Agamben notes, the juridical norm is suspended so that "the existence of the norm and its applicability to the normal situation"[5] might be safeguarded—the CONELRAD system was designed to suspend broadcasting's normal rules and applications as a means of guaranteeing their lasting reality, authority, and legitimacy.

Controlling Electromagnetic Emergencies

In a letter dated January 16, 1951, Assistant Secretary of Defense Marx Leva urged Democratic Senator Edwin C. Johnson, chairman of the Senate Committee on Interstate and Foreign Commerce, to immediately introduce legislation, drafted by the Department of the Air Force, that would give the president the power to control electromagnetic radiating devices "for the purpose of denying their use to a potential enemy for navigation of piloted or pilotless aircraft or missiles directed toward targets in the United States."[6] The next day, Johnson introduced Senate Bill 537, also known as the Electromagnetic Radiation Control Act, and hearings were held before his committee on February 21 and 22.[7]

Major General Francis L. Ankenbrandt, the Air Force's director of communications, served as spokesman for the Defense Department at the hearings. In his prepared statement, the general explained the rationale for the bill, insisting that the exigencies of Cold Warfare required Congress to seriously reconsider the statutory meaning of *radio communication*, which the 1934 Communications Act had defined as "the transmission by radio of writing, signs, signals, pictures, and sounds of all

kinds, including all instrumentalities, facilities, apparatus, and services (among other things, the receipt, forwarding, and delivery of communications) incidental to such transmission."[8] This definition, codified during the relative calm of the interwar period, was, 17 years later, dangerously inadequate, according to the Pentagon, as it excluded "many new types of devices which emit electromagnetic radiations."[9] No less dangerous were the restrictions the Communications Act placed on presidential prerogative in times of war or national emergency. In an age when the "development of weapons of mass destruction has made the element of surprise—that is, the first blow—perhaps the most important phase of modern warfare," it was imperative, Ankenbrandt contended, that the United States "be prepared for that first blow in order to minimize its effect and to permit immediate retaliation."[10] The stakes of surprise were higher than ever before: a Pearl Harbor-style atomic strike on American soil would be positively ruinous. The answer to the frightful insufficiencies of existing law lay in "the enactment of firm, broad, statutory authority which will provide a legal means of control by the President, in the interest of national security, of any device capable of emitting electromagnetic radiation which could be utilized for positive navigational guidance by an enemy attacking the United States."[11]

America in the early 1950s was abuzz with all manner of radiation-emitting apparatus; its homes, workplaces, leisure spaces, and transportation routes humming a veritable medley of electromagnetic technology. Senate Bill 537, as written, proposed to grant the nation's commander-in-chief the authority not only to cease the operation of all public and private broadcasting stations but also to halt the buzzing and humming of a wide range of industrial machines, medical and scientific instruments, and ordinary household appliances.

Ankenbrandt tried to assure the committee that such authority would not be abused, that a wrench would not be thrown into the workings of everyday life on a whim. The Defense Department had no intention of exercising "peacetime control of normal transmissions or radiations to the detriment of authorized individuals and public activities," he said, "except when there is evidence that the international situation has deteriorated to an alarming state and that a raid is imminent."[12] Only in the most extreme circumstances would the rights of legitimate radio operators and licensed broadcasters be suspended; only when it was absolutely necessary would the technological liberties and productivities of the American people be curtailed. The nation's military leaders understood full well that an enforced electromagnetic shutdown could devastate the economy and demoralize the citizenry:

> In modern warfare, the civilian economy and morale of a nation are as important to the nation's security as military might. The Department of Defense could not afford to suspend even temporarily the entire life of any section of the country and is fully conscious of its responsibility and obligations in this respect.[13]

The proposal before the committee was intended to enable the Pentagon to strategically "counteract the activities of saboteurs, fifth columnists, or other subversive elements,"[14] not to empower it to arbitrarily or capriciously interrupt the flows of commerce and culture.

Johnson and fellow Democratic Senator Warren G. Magnuson pressed the general on the technical language of the bill. Referencing a list prepared by the FCC, they asked him to indicate which technologies, in his estimation, came within the scope of the legislation and which ones did not. Would oil heaters, vacuum tubes, or diathermy machines be subject to government seizure and control? Would remote-control devices, burglar-alarm systems, or mercury-vapor sunlamps be? How about neon signs, "radar ranges" (microwave ovens), or phonograph oscillators? How about elevator motors, spectroscopes, utility power lines, arc welders, ultrasonic generators, x-ray equipment, television receivers, hydroelectric dynamos, automobile ignitions, electric razors and blankets, or police and taxicab radios? After all, did not each of these things send out electromagnetic waves? Did not each cause the ether to crackle with energy? And if these and like contrivances did, in fact, fall within the bill's ambit, what would the implications be for citizens and consumers? for business and industry? for public institutions? for communications and the circulation of information? Even as he patiently addressed each item on the FCC's list, Ankenbrandt labored to make a larger point: most of the devices in question were either not powerful enough or not constant enough—the radiation they generated was too meager or too intermittent, in other words—to be useful as navigational aids for enemy aircraft and thus did "not come under the purposes of this bill."[15]

The committee remained skeptical. Magnuson continued to worry that the president could, in a spasm of imprudence, "paralyze the country by an order."[16] Johnson concurred, adding that, "if it were done without good judgment," such an order "could prove very disastrous . . . . The security of the country is very necessary, but we do not want arbitrary action and unnecessary action . . . or foolish action."[17] The chairman was particularly concerned that such action, taken in relation to radio and the new medium of television, could gum up the gears of democracy. "It seems to me that we ought to approach this problem not only in the spirit of protecting and enhancing the security of the country," he declared, but also in the spirit of protecting and enhancing "the very essential telecasting and broadcasting of the country, which . . . is essential to the proper and effective and efficient . . . and desirable operation of democracy."[18]

The senators' reservations were echoed at the hearings by representatives from several municipal and professional organizations. All who testified agreed the federal government was obligated to safeguard the electromagnetic spectrum. Yet no such unanimity existed when it came to the question of whether the legislation actually provided the most sensible and effective means of securing the airwaves. Two parties in particular opposed the Electromagnetic Radiation Control Act: the broadcasting industry and the emergency-services sector. Despite their differing interests and orientations, commercial broadcasters and emergency responders alike complained that the terms of the bill were overly broad, encompassing too many technological devices, on the one hand, and vesting too much discretionary power in the president, on the other.

Although numerous postwar industries and institutions depended on the controlled application of electromagnetic radiation, none did so more fundamentally,

or more conspicuously, than the broadcasting industry. Perceiving in the Defense Department's proposal a challenge to its corporate autonomy, the industry dispatched a cadre of credentialed advocates to Capitol Hill to lobby against the legislation. In their testimony before the committee, engineers from the Radio and Television Manufacturers Association and the National Association of Broadcasters (NAB) deployed an array of scientific terms, mathematical quantifications, and technical charts and diagrams in order to demonstrate that the bill, however well intentioned, was essentially ill conceived. Backed by an abundance of facts and figures, the engineers were doubtless a compelling lot. But the industry's most forceful (and most colorful) advocate on the Hill was surely NAB President Justin Miller.

At the hearings, Miller, a former federal judge, made the case for the opposition in a lengthy and strongly worded statement. He criticized the bill for lumping together basically unlike things, for conflating the meanings of *radio communication* and *radiation*, for "hodgepodgeing" notions of "broadcasting and nonbroadcasting."[19] To equate radio and television stations with, say, "diathermy machines and machines for drying plywood"[20] was to confuse apples and oranges, to commit a category mistake. "The difference between the two forms of electromagnetic radiation is so great," Miller asserted, "and their impacts upon the people of the country so different that they cannot be considered in the same breath."[21] Broadcasting was more than a mere tool, a simple means to a simple end; it was a complex technology that occupied a central place in American society and in every American's psyche. Were it to stop working all of a sudden, mass pandemonium might well ensue:

> The people of the United States have come to rely on broadcasting as a major source of news and information, especially in times of crisis when other means of information fail. If all broadcasting transmission should suddenly cease, it might cause public panic and hysteria beyond all possibility of measurement.[22]

Miller's NAB colleague, Director of Government Relations Ralph W. Hardy, too, highlighted the public's habitual dependence on broadcast media:

> The American public . . . has acquired a confidence in the reliability and accessibility of instantaneous broadcasting services in emergency situations. We have evolved a standard pattern of behavior in the presence of danger and distress. Almost without deviation, the average person, after checking on self-preservation and attention to those close at hand, will go to a radio set, turn it on, and find out what has happened and get instructions on what to do.[23]

Here, as elsewhere in their testimony, industry representatives claimed for broadcasting a vital social utility and an urgent national necessity. Radio and television were cast not only as crucial oracles of information but also as saturating and sustaining forces of common life, every bit as ambient and omnipresent as the air that carried their signals. To be sure, Miller and Hardy painted a picture in which the abrupt elimination of the country's "normal transmissions" (to use Ankenbrandt's term) would result in the creation of a mass communicational vacuum, an informational void breeding ignorance and insecurity. They suggested that, for a citizenry accustomed to an ether constantly "alive" with electromagnetic vibrations,

an acute outbreak of etheric stillness, of "dead air," would be massively traumatic, with the potential to precipitate severe bouts of anxiety, extravagant outpourings of emotion, and scenes of chaos and confusion on a mind-boggling scale. They implied that a policy of radio silence, imposed on the civilian population in the midst of an atomic emergency, would be a mistake of catastrophic proportions.

Miller raised a number of other concerns during his turn in the spotlight. He was troubled, he said, by the way Senate Bill 537 gave the president the "arbitrary and un-American" power "to strip the people of their freedoms and to destroy their rights, even in times of peace"—this being precisely "the kind of power which a Stalin or a Hitler might exercise."[24] He was troubled, as well, he said, by the unfair penalties to which broadcasters would be liable, and by the inadequate compensation to which they would be entitled, should the legislation be signed into law. The situation called to mind the demented justice of

> Emperor Caligula who posted his laws, high, out of the sight of his people, and then punished them for violations of which they were not aware. It reminds us of ex post facto laws—forbidden by our Constitution—under which men were punished for acts innocent when committed, but made punishable by laws enacted thereafter.[25]

Equally distressing, the bill showed little regard for broadcasters' livelihoods:

> In fairness to the broadcasters of the country, . . . recognition should be given, explicitly, to loss which may be suffered, not alone from governmental use, but from putting the station off the air altogether, or from controlling it in such manner as to destroy its audience, eliminate its advertisers or break down its good will in the community which it serves.[26]

Never mind those pesky questions about "who 'owns the ether' or the 'airways' or the 'frequencies,'"[27] Miller advised the committee; broadcasting was at bottom a business like any other. Station owners, therefore, needed to be sufficiently remunerated whenever, and for whatever reason, the government stepped in and stanched their revenue streams, diminishing their public standing in the process.

For his finale, the NAB president trotted out the industry's old standby, its most tried-and-true bulwark against incipient tides of government intervention: the First Amendment. "The freedom of speech and press is so vital to the integrity of our country," he proclaimed, "that its regulation and control by Government should be minimal in character."[28] This foundational principle of the US constitutional system was particularly important "in time of war, when the people are most willing to surrender their freedoms."[29] Orchestrating his argument to a patriotic crescendo, Miller warned that the legislation, though "drafted very seriously and with great care to accomplish a particular purpose,"[30] threatened to undermine cherished American values, moral as well as political:

> If the United States is not to become a garrison state, means of communication must remain open to our people; especially in times of crisis. If this is not done, we will lose the understanding of governmental action, the sympathy for oppressed people, the resiliency of mind and spirit which makes us a resourceful people.[31]

The industry's position was plain enough: the federal government had to recognize and come to grips with the dire consequences of interrupting the broadcast signal—a signal rightfully managed and maintained by those faithful ambassadors of the people, the commercial media. The decision to discontinue the routine transactions and transmissions of the nation's radio and television stations was not to be taken lightly.[32]

Emissaries from the emergency-services sector harbored misgivings of their own. Like the National Association of Broadcasters, both the International Association of Fire Chiefs (IAFC) and the International Municipal Signal Association (IMSA) adamantly opposed a policy of civilian radio silence. But while broadcasters argued that a blackout imposed from on high would imperil members of the public by preventing them, as ordinary individuals, from dealing with pressing dangers, emergency responders emphasized the life-or-death urgency of their ability, as trained professionals, to readily access and use the electromagnetic spectrum at all times. Deprived of radio communications, citizens would find it harder to help themselves in an emergency, whereas civil servants would find it harder to help others.

The IAFC's Herbert G. Friede and Roi B. Wooley stressed the importance for national security of America's firefighters. "Fire is the greatest potential enemy which can destroy us at any time," Friede declared. "If we should be so unfortunate as to have an attack, our emergency services are indispensable."[33] Should those services be impaired by legislative action, the home front would be that much more vulnerable to devastation. Wooley insisted that "any factor, however urgent, which will hinder or cripple vital fire service communications—either during peacetime or wartime emergencies—constitutes a clear threat to national economy and security."[34] The nation's firefighters, according to Friede, were just as critical to the safety of the civilian population as the nation's armed forces: "Certainly it is not contemplated that our Army, Navy, or the Air Force will dispense with the use of radio," he noted. "Yet our emergency services, who are not considered under the Federal Communications Commission's rules as quasi-governmental agencies, are subject to all the regulations as promulgated for the entire public radio industry."[35] In his letter to the committee, the IMSA's H. G. Reinsmith advanced objections in a similar vein. "The emergency services are the first line of defense in case of attack," he wrote. "To close down or in any way interfere with the emergency radio services of our fire departments, police departments, forestry fire, highway, and utility services would as surely defeat us as if an enemy had landed on our shores."[36]

By the end of the hearings, the Senate Committee on Interstate and Foreign Commerce was convinced that the Electromagnetic Radiation Control Act should not go forward as written. The broadcasting industry and the emergency-services sector—along with the Federal Power Commission and the newly established Federal Civil Defense Administration (FCDA), each of which expressed reservations in a written statement—had persuaded the committee that an amendment to existing law would achieve Pentagon objectives more efficiently and less intrusively than the

legislation under consideration. The House of Representatives, which held its own committee hearing on the matter in August 1951, agreed.[37]

On October 24, 1951, the Eighty-second Congress enacted Public Law 200, amending the "War Emergency—Powers of President" section of the Communications Act of 1934. Specifically, the amendment added a new subsection, 606(h), and revised the language of subsection 606(c). The former stipulated penalties for willful violators of the section's provisions; the latter clarified the president's authority to seize and control devices, including radio and television apparatus, that emitted electromagnetic radiation within a specified range (between 10 kilocycles and 100,000 megacycles) and were "suitable for use as a navigational aid beyond five miles."[38]

The Perils of Dissemination

Together, the *Emergency Control of Electromagnetic Radiating Devices* hearings and the subsection 606(c) revisions rearticulated a long line of thinking about the disseminative perils of over-the-air communications, from wireless telegraphy and wireless telephony to radio and television broadcasting. These media have at various times been feared for their capacity to shoot energy waves every which way, to propagate signals across vast stretches of territory invisibly and intangibly, to scatter messages into the atmosphere at the speed of light. Transmissions of this sort are said to be trouble because they can be detected and exploited by anyone with the proper equipment—scoundrels and saboteurs included.

Susan Douglas notes that wireless telegraphy was, from its inception, seen as

> difficult to control. It sent messages through space in all directions. It was not secret, or even private, and it was subject to interference. Access was at first unrestricted: anyone with inexpensive homemade apparatus could transmit and receive signals . . . . The ether was invisible, it was everywhere, and it seemed open to all. No known rules governed its use.[39]

Discussing popular reactions to wireless telephony, Catherine Covert remarks:

> Veteran telephone users were affronted . . . to discover that radiophone signals connecting two people also radiated indiscriminately through the air, allowing other individuals with radiophones to listen or wantonly to interrupt. Writers spoke resentfully of "leakage of signals" into the hands of "unauthorized persons." The factor of "non-secrecy" was also deplored through the teens as a vital commercial defect . . . . At the same time the growing tribe of amateur experimenters shared the telephonic model, smirking about "eavesdropping" on others' signals.[40]

John Durham Peters observes that the search for a secure channel of communication, for "the electromagnetic equivalent of the postal envelope,"[41] preoccupied early radio engineers:

> The looming obstacle, as with the mails before envelopes and anonymous sending and with the party line years of the telephone, was the lack of confidentiality. Anyone with a receiver set potentially had, as the parable of the sower put it, "ears to hear." Reception of the signal was inherently open-ended . . . . The inability to bar

> unintended recipients was a major hindrance to the profitability of wireless telegraphy and . . . wireless telephony.[42]

If radio's "inherent publicity" constituted its technological marvel, its "tendency to stray"[43] and openness to eavesdropping constituted its twin technological menaces.

By the late 1940s, these old anxieties had taken a decidedly more ominous twist. The technical problem of electromagnetic interference, of too much "noise" in the system caused by too many simultaneous users, was a continual vexation in the early years of wireless, when the medium was largely the province of military and amateur operators. The threat in those days concerned the crippling effects of static and signal overlap, with much of the blame falling (rightly or wrongly) on the "hams." The threat in the Atomic Age, by contrast, was not from interference by homegrown amateurs—decades of regulation restricting the activities of hobbyists had more or less taken care of that problem—but, rather, from interception by foreign aggressors. The domestic airwaves, having been purged of their primitive anarchies and inefficiencies, were now dreaded for their indiscreet exposure to alien influence, their shameless lack of prophylaxis. Wandering around without cloak or shield, the broadcast signal was amenable to malicious appropriation from the outside, susceptible to sabotage by exogenous others. (Whereas the *Red Channels* scare was about the infiltration and subversion of the broadcasting industry, a political sociological question, the electromagnetic radiation scare was about the infiltration and subversion of the broadcast signal itself, a political technological question.) A hostile adversary such as the Soviet Union could, without much trouble, turn standard, seemingly harmless AM, FM, and TV transmissions against the American people in a manner almost too horrible to imagine. For a population haunted by the specter of its extermination at any given moment, radio's intrinsic "leakiness" and incorrigible "lack of confidentiality" had acquired a new and terrible urgency indeed.

In addition to extending and intensifying longstanding worries about wireless dissemination, Cold War apprehensions about the hazards of radiation from ordinary electromagnetic devices resonated with contemporaneous apprehensions about the hazards of radiation from a more extraordinary energy source: the atomic bomb. Besides its initial flash of light, so brilliant it can cause blindness, an atomic detonation has four destructive effects: blast (shock wave), heat (thermal radiation), direct nuclear radiation (ionizing radiation), and delayed nuclear radiation (radioactive fallout). Although their scale and magnitude were awesome and unprecedented, the first two effects—a crushing blast of air, a combustible burst of heat—would not have been difficult for mid-century Americans to fathom, comparable as they were to aspects of weather (wind and temperature) and of conventional warfare (explosive ordnance). The second two effects, however, were a good deal more mysterious—and a good deal more uncanny. How much nuclear radiation did an A-bomb release? How far did it travel? How long did it linger? How much of it could the human body tolerate? How far away from ground zero was far enough? What were the physiological consequences of being too close? of being exposed for too long? of absorbing too much?

Many Americans first glimpsed the answers to these questions in December 1945, when Philip Morrison, a Manhattan Project scientist, appeared before the Senate Special Committee on Atomic Energy. In his testimony, Morrison described in graphic detail the effects of radiation poisoning on Hiroshima's survivors. In succeeding weeks and months, Morrison's firsthand account of the bomb's human toll was cited, often at great length, in the programs of renowned radio announcer Raymond Gram Swing and in the pages of national periodicals such as *Newsweek* and *The New Republic*.[44]

The awful truth about atomic radiation was further publicized on August 31, 1946, in a special issue of *The New Yorker*—an issue written entirely by a single journalist, John Hersey, and devoted entirely to a single topic, "Hiroshima." Like Morrison, Hersey "gave careful attention to the lingering effects of radiation exposure," which, as Paul Boyer notes, was "still in 1946 a little-understood phenomenon and one that most early accounts barely touched upon."[45] Hersey's essay made a strong impression on the public: "The book version became a runaway best-seller. The Book-of-the-Month Club distributed free copies to many of its 848,000 members. A reading of the entire work, in four half-hour segments, over the ABC radio network won the Peabody Award for the outstanding educational broadcast of 1946."[46]

Radiation fears were aroused afresh the following year. Drawing on new data from atomic experiments conducted at Bikini Atoll in the summer of 1946, a number of popular magazines, including *Life*, *Collier's*, and *Reader's Digest*, published articles in 1947 on the mortal risks of radiation. Such press accounts, together with army medical officer David Bradley's best-selling chronicle of the Bikini experiments, *No Place to Hide*, reinforced Americans' uneasiness about the effects of ionizing radiation. They also acquainted them with the contaminative dangers and eerie dispersiveness of radioactive fallout, or what *Reader's Digest* referred to as the bomb's "mist of death."[47]

At the start of the Cold War, anxious, insecure feelings about atomic radiation mingled with and mirrored anxious, insecure feelings about electromagnetic radiation. Both of these structures of feeling involved the hazards of invisible emanations of technological origin, the perilous properties of weirdly diffusive things. Both centered on strange, potentially harmful forces that rippled through the air, unguided and ungovernable by the devices that generated them. And both bore genealogical traces of earlier pseudoscientific understandings of energy fields as occult media: "radium rays" and radio waves were each initially thought to be conveyed by and through a spooky etheric substance.[48] Ultimately, though, both the dread of unruly, uncanny, unsafe radioactive emissions and the dread of unruly, uncanny, unsafe radio transmissions tapped a more generalized technophobia, an attitude conditioned by distinctly modern discourses of technology out of bounds and out of control, by nervous cultural narratives in which the world of man's invention goes awry, in which his most marvelous creations, from utopian media of mass communication to dystopian weapons of mass destruction, are not totally mastered and never totally masterable—a world, in short, where accidents of technology are inevitable.

The Promise of Communications

In spite, or perhaps because, of the inevitability of accidents, dreams of technological mastery are wont to persist. Announced to the public on December 2, 1952, the FCC's plan to control electromagnetic radiation, or CONELRAD, represented a compromise between the needs of the Air Force's Air Defense Command, the quite different needs of the Federal Civil Defense Administration, and the demands of the broadcasting industry.[49] The Air Force aimed to protect the population by preventing enemy aircraft from exploiting the nation's frequencies for direction-finding purposes; as far as it was concerned, a blanket imposition of radio silence, ordered by the commander-in-chief, would suffice to achieve this end, so long as the term *radio* was understood to designate a wide range of electromagnetic radiating devices (hence Senate Bill 537). From the FCDA's perspective, however, a blackout by decree would only serve to make a bad situation worse; it wanted instead a dual-purpose plan that allowed civil-defense workers to wirelessly intercommunicate while enabling civil-defense officials to publicly disseminate crucial information and calming reassurances. If the Air Force presumed the authority to speak for the population, and the FCDA did the same for the public, the broadcasting industry presumed the authority to speak for the people. The industry contended that the American people, as represented by commercial broadcasters, were entitled to their airwaves, even in times of war or national emergency. This meant that station owners had to be allowed to retain possession of, and maintain control over, their assets and enterprises no matter the circumstances.

Technically, CONELRAD was a complicated system of transmitter protocols involving alternating sign-offs and sign-ons, frequency shifts, power-output reductions, and coordination between regionally "clustered" stations.[50] According to the FCC's *Approved Plan for the Control of Electromagnetic Radiation*, Air Defense Command would telephonically notify "basic key stations" that an air raid was imminent; these stations would, in turn, telephonically notify "relay key stations," and so on down the line. (Apparently, in order for radio to save the nation, the telephone first had to save radio.) Nonparticipating AM stations, together with all amateur operators and all FM and TV stations, would go silent, in some cases immediately, in some cases after broadcasting authorized civil-defense warnings or directives.[51] Participating stations would abandon their normal FCC-assigned frequencies, shifting to one of two emergency frequencies (640 or 1240 kilocycles). No participating station would be permitted to identify itself on the air or to transmit with more than 10 kilowatts of power for the duration of the alert. These frequency shifts and power-output reductions, when combined with one of four prescribed techniques for scrambling the broadcast signal, would make it all but impossible for that signal to be exploited as a beacon, thereby confusing enemy pilots as to their targets' precise whereabouts. Not incidentally, this "planned confusion"[52] would be accomplished without depriving either the FCDA of its preferred medium of communication or the broadcasting industry of its particular means of accumulation.

Although ostensibly a civilian technology, CONELRAD appropriated two established tactics from the realm of modern military communications: radio silence (observed by nonparticipating stations) and radio deception (practiced by station clusters). When employed defensively, each of these tactics offers a unique solution to the problem of signal interception by an enemy force. If signal interception is possible because of radio's disseminative disobedience, its "tendency to stray," it is problematic because both semantic information (the symbolic content of communication) and spatial information (the material point of transmission) are liable to be disclosed to "unauthorized persons."

Radio silence precludes the possibility of semantic or spatial disclosure by preemptively initiating an absolute disengagement, by "pulling the plug" on the machinery of over-the-air communication. Its imperative is drastic, repressive, ascetic: the surest way to defend against the potentially deadly spread of the wireless signal, on this view, is to abstain from acts of dissemination. (Promiscuous communicativity here is guiltily associated with infectious communicability.) Radio silence enforces a strict prohibition; it realizes censorship in its most radical form, banning not merely the message but the medium as well. It avows that electromagnetic protection lies in the production of what might be called *mass noncommunication*, a production that is really a non-production.

Radio deception, on the other hand, is active, engaged, and ingenious. It covertly manipulates an otherworldly ether in order to achieve worldly concealment. Stealthily, almost prankishly, it turns the wireless signal's treacherous diffusiveness to its own advantage. "Jamming," "spoofing," "decoying," "scrambling," "frequency-hopping": these electronic countermeasures (as they are known in military parlance) are simultaneously methods of martial combat, feats of technological audacity, and instances of expert skullduggery. Radio deception swears that the security of the electromagnetic spectrum lies in the production of disinformation, or what might more accurately be called *discommunication*.

CONELRAD's investment in discommunication as a negative technique was a consequence of its more fundamental investment in radio as a positive communications technology. These investments were historically novel and unusual. During World War I, the US Navy seized control of the nation's wireless communications network, and both amateur and commercial radio were formally outlawed for the duration of the conflict.[53] During World War II, commercial and public broadcasters were required by law to observe radio silence during an air-raid alert, and amateurs were ordered off the air entirely.[54] After the war, however, a new school of thought arose that challenged the wisdom of an emergency communications plan based exclusively on mass noncommunication. An artifact of the Cold War civil-defense ethos, the new way of thinking dismissed total radio silence as a relic of a bygone era—an era when bombs did not contain fissionable materials or explode into mushroom clouds; when citizens did not have to dread the combined ravages of blast, heat, and radiation; when nation-states did not face the absurd prospect of annihilation overnight. Confronted with these grim realities, civil-defense planners imagined that broadcasting could be mobilized to preserve social order during an

atomic strike and to ensure national survival in the aftermath of one. CONELRAD's incorporation of discommunication was thus intended to make it safe for a select contingent of broadcasters, under the guidance of the FCDA, to remain on the air to help fend off the forces of social and national disintegration.

The use of radio communications to save lives in an emergency harks back to the beginnings of wireless, when the medium was regularly employed to avert or mitigate disasters at sea. On the open waters, to be invisible to other vessels was to be incommunicado, and to be incommunicado was to be dangerously isolated. Fires, collisions, groundings, fuel spills, explosions, lightning strikes, mechanical breakdowns: all manner of maritime accidents, or "acts of God," often ended in tragedy in the pre-wireless era because distress signals that could not be seen could not be heeded. But a ship captain whose calls for help flashed across oceanic expanses in a matter of seconds had reason to believe that he and his crew might be rescued.[55]

As for radio broadcasting, its life-saving value was demonstrated in the United States as far back as 1937, when, as Lyombe Eko and Joanne Gula note,

> massive snow melt flooding of the Ohio and Mississippi Rivers inundated towns and countryside alike, and local stations often were the only link with the outside world for days at a time . . . . Regular program schedules were replaced with day and night reporting (sometimes around the clock) and radio broadcasters directed rescue teams where they were most needed. Some stations became arms of official state or federal agencies and provided a personal message service that might normally have been an illegal point-to-point use of radio stations.[56]

CONELRAD's faith in the salvational power of radio communications was inspired by these and other disaster-related applications of wireless technology in the first half of the twentieth century. Yet its distinctive ideological assumptions and commitments were more immediately shaped by *Civil Defense for National Security*, a report prepared in 1948 by the Office of Civil Defense Planning under the directorship of Russell J. Hopley, president of Northwestern Bell Telephone Company.[57] Commissioned by the Department of Defense, the 301-page report "outlined a model state civil defense organization, analyzed the various specializations essential to civil defense, and proposed a functional division of labor based on these specializations as well as a political division of labor among federal, state, and local civil defense authorities."[58]

Civil Defense for National Security, also known as the Hopley Report, hailed communications as "the 'nerve system' of civil defense,"[59] recycling an old organicist metaphor whereby social processes involving electromagnetism are likened to physiological processes involving electrochemistry.[60] "The best defense system that could be devised would fail if its communications system did not function," the report stated bluntly, "and particularly if it suffered major failures in time of extreme emergency."[61] A foe capable of rattling America's "nerve system" to the point of paralysis was one that could be neither defended against nor defeated. From this sobering recognition, it followed that "every contingency must be provided for and sound plans developed so that in such an emergency communications in some form will be available."[62]

The Office of Civil Defense Planning envisioned an integrated multimedia emergency communications infrastructure embracing power sirens, loud-speaker systems, telegraphy, telephony, teletypewriter, facsimile, and, above all, radio-telephony and radio broadcasting. (Amateur radio and television broadcasting, the latter still in its infancy in 1948, were also mentioned as possibilities.)[63] In an atomic emergency, radio was supposed to fulfill a number of civil-defense functions, all of which turned on the technology's capacity for instantaneous transmission. As a telecommunications medium conformable to the administrative necessities of the state, radio would distribute alerts and updates to civil-defense officials. It would summon civil-defense workers, dispatch civil-defense units, and coordinate civil-defense operations. It would enable police officers, firefighters, and rescue crews to carry out their duties. And it would facilitate post-attack evacuation and transportation operations, as well as air-reconnaissance missions to assess "radiological activity" and "the extent of destruction."[64] As a broadcast medium conformable to the existential necessities of the people, radio would provide "services for public information and guidance as well as for warning."[65]

Of course, none of these vital wireless practices would be possible under a regime of radio silence. Although it acknowledged that resorting to mass noncommunication might occasionally be necessary "for military security purposes," *Civil Defense for National Security* advocated an approach to emergency communications predicated on "the continuous operation of the radio telephone services of the police and fire, as well as of radio broadcasting stations."[66] The chief drawback of continuous radio operation—namely, the signal's exposure to enemy interception—could be eliminated through electronic countermeasures: "Studies should embrace radio techniques, possible use of codes by such agencies as police and fire to give protection to military security, deceptive and other counter measures designed to obtain maximum usefulness of radio at all times."[67]

Taking as axiomatic the medium's powers of mass persuasion, the Hopley Report assigned radio a major role in each phase of civil defense. During peacetime, it would be part of an elaborate public education program designed to inculcate "the basic principle of self-help."[68] During wartime, it would be deployed as a weapon to combat what civil-defense planners called "the problem of panic."[69]

According to the Cold War civil-defense doctrine of survival through self-help, individuals and families were primarily responsible for their own safety and protection in an atomic emergency.[70] In order to discharge this responsibility, they would need to successfully negotiate the acute psychological distress brought on by the A-bomb's frightful arrival. No matter how great the temptation to escape into mindlessness, to submit to the rule of rushing adrenaline, citizens could not lose their composure for so long as a single minute. They could not let themselves succumb to demoralization or, worse, to the dissociative, self-destructive symptoms of nuclear terror—this for their own sake and for that of their country. Greeting the enemy's radioactive onslaught with a posture of defiant self-possession was at once an act of rational self-interest and an expression of civic duty. Panic was irrational, imprudent, and unpatriotic.

Civil Defense for National Security recommended that the airwaves be used during and immediately following an atomic strike to lend strength and succor to a population on the verge of panic:

> The public must be encouraged to steel itself against the tremendous shock of surveying the damage, the loss of life, and the casualties which will inevitably ensue. During this period of shock, it is almost certain that the public will come closest to mass hysteria. Broadcasting stations through proper programming and dissemination of reliable information may perform a service unavailable by any other means.[71]

What constituted "proper programming" in an atomic emergency? How might radio content be crafted to "reassure the civilian population"? to reestablish "as much as possible the even tenor of community life"?[72] The report offered several examples. Broadcast messages could

> prepare those who have taken shelter for the emergencies they must face when the all-clear signal is sounded, giving them instructions on assembly points to which they should proceed, emphasizing the need for orderly conduct and describing the Civil Defense services which will be available to restore the community to as normal a condition as possible.[73]

Or they could "inform the public of those areas which should be avoided because of radiological or other contamination"; or "give instructions on the use of water and other utilities in the home and in other locations after the attack"; or "warn vehicular traffic approaching the damaged area to stay clear"; or apprise "separated persons" as to the safety of their relatives, "thus aiding civilian morale immeasurably."[74]

If nuclear hell came to the home front, radio promised to be there to stabilize a society on the edge of collapse, to pull the people back from the brink of bedlam. With enlightenment from the etheric realm, millions of Americans would be emboldened to behave as duty demanded: rationally, purposefully, and hopefully. Messages conveyed by controlled electromagnetic radiation would come to the rescue of a desperate nation, helping its citizens—their passions now subdued, their resolve now hardened—survive the madness of the present moment while shoring up their sense of optimism about the future. Feared for its panic-inducing potential ever since the Mercury Theatre's infamous 1938 *War of the Worlds* broadcast, the radio medium here becomes a singular means of mass panic prevention, an instrument of national crisis management, a technology for soothing the nerves and boosting the morale of the bomb-braving multitude.[75]

Broadcasting Exceptions

The state of exception, or state of emergency, as it has historically been known in the United States, describes a situation in which the norm governing the juridical order is suspended through an act of sovereign decision. This suspension not only guarantees the preservation of the norm but, as the supreme exercise of executive power, makes the norm possible in the first place. Sovereign power, in this formulation, is the

power to declare (and end) a state of emergency, to decide when (and for how long) to suspend the rules of the normal politico-legal order.[76]

The institutional events and discursive controversies surrounding the development of the CONELRAD system—the military proposals, the congressional hearings, the legislative and executive actions—pivoted on the question, practical and theoretical, of the state of emergency's relation to electronic mass media. That is, they involved the problem of why, how, and whether governmental power should be exercised, in times of war or national emergency, to suspend civilian norms of wireless communication, to create an exception to the regular broadcasting order.

In the Atomic Age, this problem assumed monstrous proportions and a feverish intensity. While the question of what to do with wireless communications networks in circumstances of urgent necessity was not unprecedented (indeed, it was as old as the networks themselves), the geopolitical circumstances were perilously new and peculiar. The raid on Pearl Harbor had proved that America's airwaves were susceptible to foreign interception and sinister exploitation. Seven years later, the Hopley Report concluded that, in the age of atomic weaponry, those airwaves had to be secured at all costs. Although fluid, amorphous, and imperceptible, the electromagnetic spectrum, or at least the portion of it that the federal government allocated to itself as a sovereign right, was like a territory of the state, a rarefied but nonetheless real territory—an "extraterritoriality,"[77] in fact—whose integrity required a robust defense. To leave the nation's frequencies exposed and unprotected was now to court nuclear disaster. The Pentagon brass dreamed of "an electronic Paul Revere."

Devised at a time when legal definitions of *radio communication* and *radiation* became confused and their technical distinction confusing, when old fears about uncontrolled radio transmissions intersected new anxieties about uncontrollable radioactive emissions, and when the internal threat posed by signal chaos had given way to the external threat posed by signal capture, CONELRAD realized a new paradigm of broadcasting in the United States. Designed to be used only, and precisely, in exceptional situations, the nation's first coast-to-coast emergency broadcast system neither opposed nor abolished the established blueprint for radio or the emergent blueprint for television; instead, it served as their radical alternative. It did not undermine either the commercial or the public model of broadcasting; on the contrary, it undergirded them both. Its interruption of the normal electromagnetic flow was intended not to permanently divert or dam that flow but, rather, to safeguard the conditions of its possibility.

Explaining her approach to broadcasting historiography, Michele Hilmes writes:

> My purpose is to offer an overview of the complex and often profound ways that our primary twentieth-century broadcast media—radio and television—have intersected with our national culture to produce not only institutions (such as networks, stations, cable channels, and the FCC) but also texts (programs, messages, representations, documents), social discourses (ways of thinking and talking about these phenomena), and audiences (real, experienced, measured, and

> imagined). I believe that the best way to understand how broadcast media work in our society is to look at them as conduits for social and cultural *power*.[78]

The institutions, texts, discourses, and audiences connected to emergency broadcast media, both historically and currently, also can be understood as situated articulations of social and cultural power. For they, no less than their normal counterparts, and in their own extreme way, embody the material and ideological struggles, the codes of meaning, modes of imagining, and structures of feeling that distinguish a particular time and place. This is so even though the operations of emergency broadcasting lie beyond (if only just beyond) the horizon of ordinary experience, and even though the catastrophic risks and contingencies that activate those operations lurk below (if only just below) the surface of everyday awareness.

Notes

[1] Ed Nanas, "Wanted: An Electronic Paul Revere," *Popular Electronics*, February 1963, 41.

[2] Harry S. Truman, "Providing for Emergency Control Over Certain Government and Non-Government Stations Engaged in Radio Communication or Radio Transmission of Energy," Executive Order no. 10312 (December 10, 1951).

[3] The principle that broadcasting should serve "the public interest, convenience and necessity" was enshrined in the Radio Act of 1927 and, subsequently, in the Communications Act of 1934.

[4] See, for example, Erik Barnouw, *The Golden Web: A History of Broadcasting in the United States, Volume II—1933 to 1953* (New York: Oxford University Press, 1968); and *The Image Empire: A History of Broadcasting in the United States, Volume III—from 1953* (New York: Oxford University Press, 1970; Susan J. Douglas, *Listening In: Radio and the American Imagination* (Minneapolis: University of Minnesota Press, 2004); Douglas Gomery, *A History of Broadcasting in the United States* (Oxford: Blackwell, 2008); Michele Hilmes, *Only Connect: A Cultural History of Broadcasting in the United States*, 2nd ed. (Belmont, CA: Thomson Wadsworth, 2007); and *Radio Voices: American Broadcasting, 1922–1952* (Minneapolis: University of Minnesota Press, 1997).

[5] Giorgio Agamben, *State of Exception*, trans. Kevin Attell (Chicago: University of Chicago Press, 2005), 31.

[6] US Senate, Committee on Interstate and Foreign Commerce, *Emergency Control of Electromagnetic Radiating Devices*, Hearings, February 21–22, 1951 (Washington, DC: GPO, 1951), 2.

[7] A closed committee hearing was held a month earlier, on January 24, 1951.

[8] *An Act to Provide for the Regulation of Interstate and Foreign Communication by Wire or Radio, and for Other Purposes*, Public Law 416, 73rd Congress, June 19, 1934. The definition of *radio communication* appears in section 3(b).

[9] US Senate, Committee on Interstate and Foreign Commerce, *Emergency Control of Electromagnetic Radiating Devices*, 8.

[10] Ibid., 11.

[11] Ibid., 10.

[12] Ibid., 9.

[13] Ibid., 11.

[14] Ibid., 9–10.

[15] Ibid., 16.

[16] Ibid., 27.

[17] Ibid.

[18] Ibid., 29.
[19] Ibid., 64.
[20] Ibid., 70.
[21] Ibid., 64.
[22] Ibid.
[23] Ibid., 75–6.
[24] Ibid., 66, 69, 65.
[25] Ibid., 67.
[26] Ibid., 68.
[27] Ibid.
[28] Ibid., 69.
[29] Ibid.
[30] Ibid., 70.
[31] Ibid., 69.
[32] For more on the broadcasting industry's response to the Electromagnetic Radiation Control Act, see Nancy E. Bernhard, *US Television News and Cold War Propaganda, 1947–1960* (Cambridge: Cambridge University Press, 1999), 101–4.
[33] Ibid., 80.
[34] Ibid., 86.
[35] Ibid., 81.
[36] Ibid., 85.
[37] US House of Representatives, Committee on Interstate and Foreign Commerce, *Amend Section 606(c) of Communications Act of 1934 (Electromagnetic Radiations)*, Hearing, August 22, 1951 (Washington, DC: GPO, 1951).
[38] *An Act to Further Amend the Communications Act of 1934*, Public Law 200, 82nd Congress, October 24, 1951. See also Mark Becker, "War Powers of the President: Section 706 of the Communications Act of 1934," in *The Communications Act: A Legislative History of the Major Amendments, 1934–1996*, ed. Max D. Paglin (Silver Spring, MD: Pike & Fischer, 1999), 383–9.
[39] Susan J. Douglas, *Inventing American Broadcasting, 1899–1922* (Baltimore, MD: John Hopkins University Press, 1987), xxvii–xxviii.
[40] Catherine L. Covert, "'We May Hear Too Much': American Sensibility and the Response to Radio, 1919–1924," in *Mass Media Between the Wars: Perceptions of Cultural Tension, 1918–1941*, ed. Catherine L. Covert and John D. Stevens (Syracuse, NY: Syracuse University Press, 1984), 203.
[41] John Durham Peters, *Speaking into the Air: A History of the Idea of Communication* (Chicago: University of Chicago Press, 1999), 207.
[42] Ibid., 206.
[43] Ibid., 206–7.
[44] Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (Chapel Hill: University of North Carolina Press, 1994), 78.
[45] Ibid., 207.
[46] Ibid., 204.
[47] Ibid., 90.
[48] On the topic of radium rays and etheric substance, see Spencer R. Weart, *Nuclear Fear: A History of Images* (Cambridge, MA: Harvard University Press, 1988). On the topic of radio waves and etheric substance, see Joe Milutis, *Ether: The Nothing That Connects Everything* (Minneapolis: University of Minnesota Press, 2006); Peters, *Speaking into the Air*; and Jeffrey Sconce, *Haunted Media: Electronic Presence from Telegraphy to Television* (Durham, NC: Duke University Press, 2000).
[49] For press coverage of CONELRAD's public announcement, see Harold B. Hinton, "New Radio Plan for Foiling Raiders Keeps Stations on Air in an Attack," *New York Times*,

December 3, 1952, 1 + ; and "Radio to Keep on Operating During Raids," *Los Angeles Times*, December 3, 1952, 28.

[50] Federal Communications Commission, *Approved Plan for the Control of Electromagnetic Radiation (CONELRAD) Pursuant to Executive Order No. 10312*, November 19, 1952. See also Larry G. Burkum, "'This Is a Test': The Evolution of the Emergency Broadcast System," *Journal of Radio Studies* 2 (1993/1994): 141–50; and Peter E. Hunn, "CONELRAD: Emergency Warning System," in *Encyclopedia of Radio, Vol. 1, A–E*, ed. Christopher H. Sterling (New York: Fitzroy Dearborn, 2004), 376–8.

[51] An AM radio station had the choice to participate or not. Per the broadcasting industry's request, compliance with CONELRAD was voluntary, not compulsory.

[52] "Radio Test Slated to Foil Bombers," *New York Times*, September 13, 1953, 3.

[53] Douglas, *Inventing American Broadcasting*, 276.

[54] Barnouw, *The Golden Web*, 156.

[55] On the topic of wireless and maritime disasters, see Douglas, *Inventing American Broadcasting*, 216–39; and Paul Heyer, *Titanic Legacy: Disaster as Media Event and Myth* (Westport, CT: Praeger, 1995).

[56] Lyombe Eko and Joanne Gula, "Emergencies, Radio's Role in," in *Encyclopedia of Radio, Vol. 1, A–E*, ed. Christopher H. Sterling (New York: Fitzroy Dearborn, 2004), 546.

[57] Office of Civil Defense Planning, *Civil Defense for National Security* (Washington, DC: GPO, 1948). Beyond questions of ideology, *Civil Defense for National Security* anticipated CONELRAD in its advocacy of a "key station" scheme of organization for emergency broadcasting.

[58] Guy Oakes, *The Imaginary War: Civil Defense and American Cold War Culture* (New York: Oxford University Press, 1994), 37.

[59] Office of Civil Defense Planning, *Civil Defense for National Security*, 108. Two years later, the National Security Resources Board, in *United States Civil Defense* (Washington, DC: GPO, 1950), also known as the Blue Book, made the same claim: "The nerve system of civil defense is communications" (85).

[60] It is worth recalling that Senator Magnuson, too, invoked this metaphor when he remarked that Senate Bill 537 would give the president the ability to "*paralyze* the country by an order" (emphasis added).

[61] Office of Civil Defense Planning, *Civil Defense for National Security*, 7.

[62] Ibid., 108.

[63] *Civil Defense for National Security* had this to say about the new broadcast medium: "Television broadcasting stations provide for Civil Defense an excellent means for educating the public and conveying pertinent information through the simultaneous presentation of video as well as audio messages. Television has flexibility, permits prompt revision of information as an emergency situation changes, maintains accuracy of information by the simultaneous presentation to all users without deterioration which may occur when data are passed down through several hands .... Television is expanding across the nation. It may, therefore, reasonably be expected that a great many people will be reached through this medium. The Office of Civil Defense should keep informed as to new devices or applications of television which may be developed" (117).

[64] Ibid., 108.

[65] Ibid.

[66] Ibid., 119.

[67] Ibid.

[68] Ibid., 115.

[69] Oakes, *The Imaginary War*, 34.

[70] On the doctrine of survival through self-help, see Laura McEnaney, *Civil Defense Begins at Home: Militarization Meets Everyday Life in the Fifties* (Princeton, NJ: Princeton University Press, 2000); and Oakes, *The Imaginary War*.

[71] Office of Civil Defense Planning, *Civil Defense for National Security*, 115–6.
[72] Ibid., 116.
[73] Ibid.
[74] Ibid.
[75] This conception was reiterated in subsequent government reports such as the National Security Resources Board's *United States Civil Defense* (1950) and Project East River's *Warning and Communications for Civil Defense* (1952).
[76] Agamben, *State of Exception*.
[77] In *Global TV: New Media and the Cold War, 1946–69* (Urbana: University of Illinois Press, 2009), James Schwoch uses the term *extraterritorialities* to designate electronic information networks and other "spaces beyond the traditionally understood borders and perimeters of nation-states" (5).
[78] Hilmes, *Only Connect*, 4, original emphasis.