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Cold War Ground Zero: Medicine, Psyops and the Bomb

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This essay takes a history-of-ideas approach to place American medicine and psychiatry within the context of the Cold War. Rather than focus on physical science and technology (as is often the case in studies of science and the Cold War), the essay shifts attention to the human sciences in order to consider the ways in which medical and psychiatric research was caught up in concerns over national defence. Various arguments have proposed that US research involving human subjects between the late 1940s and the mid-1960s contravened the Nuremberg Code, which was established in 1948 to formalize the ethical boundaries of medical research and prevent any repeat of the human experimentation widely practised in Nazi concentration camps. The essay focusses, particularly, on two phases of the Cold War: the medical and genetic testing linked to the dropping of the atom bomb in Hiroshima and Nagasaki and the psychological tests (often referred to as "psyops") beginning in the World War II years but developing rapidly during the Korean War. The aim of the essay is to link a phenomenological approach to the Cold War – in which the figures of the "zero" and "cipher" frequently arose – with a discussion of the interrelationship between US national defence issues and American medical research.

Theatre historian Tracy C. Davis argues in her Cold War study *Stages of Emergency* that the acting out of disaster scenarios in the United States in the 1950s and 1960s was a theatrical routine engineered to control fears of nuclear attack. From this perspective, Cold War civil defence was a social performance in which emergency rehearsals, evacuation procedures and the preparation of fallout shelters were part of the theatrical machinery of national protection. Davis contends that performance in the 1950s was not consigned to the Broadway revival or musical revues, but "broadened its range of venues," drawing on "novel talent: physicists, economists, meteorologists, police, postmasters, wholesalers, tree-trimmers, nurses, truck drivers, bankers, psychologists, clergy, broadcasters, homemakers, and morticians."[1]

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[1] Tracy C. Davis, *Stages of Emergency: Cold War Nuclear Civil Defense* (Durham, NC: Duke University Press, 2007), 23.

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Common purpose was a central aspect of the Cold War liberal consensus, and the "vital center" which Arthur Schlesinger Jr. called for in 1949 easily mutated into inward-looking responsibility towards the family and nation. This chimes with Daniel Cordle's view in *States of Suspense* that the "myth of civil defence" surpassed actual nuclear precautions, with "the emphasis increasingly … on personal responsibility of private citizens to prepare their homes for attack."[2]

In a book republished in 2007, *The End of Victory Culture* (1995), Tom Engelhardt also draws on the rhetoric of Cold War performance, shifting from adult civil defence to the world of childhood. Many American children were inducted into the nuclear age through science fiction, comic books and government-sponsored films, such as *Duck and Cover* (1951) in which Bert the Turtle demonstrates tirelessly the nuclear safety procedure for schoolkids. Engelhardt argues that "the end of victory culture" in the US did not begin with the Vietnam War, but soon after 1945 when the triumphant victory of World War II swiftly became interlaced with despair: "children of the 50s would later remember with genuine fondness … sunny moments of play out of sight of grownups," but he notes that many experienced "the pleasures of victory culture" and "the horrors of nuclear culture" as close companions.[3] This was underlined by the recently formed Committee for the Study of War Tensions in Children which, in November 1953, criticized *Duck and Cover* for provoking anxiety in children rather than simply teaching them to perform a precautionary drill.[4]

Medicine and psychiatry in the Cold War can also be read as a form of social performance. The promise of miracle cures, popular advice columns and an explosion of self-help manuals jostled with major medical breakthroughs such as Jonas Salk's polio vaccine, which suggested that debilitating biological forces could be contained or eradicated. Medical performance went well beyond new surgical techniques and the advertisement of new pharmaceuticals. The year 1948 marked two important statements on medical ethics: the Nuremberg Code was established specifically as a response to medical testing on humans in Nazi Germany and the Declaration of Geneva reaffirmed the Hippocratic Oath to place medical ethics above any form of human experimentation (extended further by the World Medical

[2] Daniel Cordle, *States of Suspense: The Nuclear Age, Postmodernism and United States Fiction and Prose* (Manchester: Manchester University Press, 2008), 13.

[3] Tom Engelhardt, *The End of Victory Culture: Cold War America and the Disillusioning of a Generation* (Amherst, MA: University of Massachusetts Press, 2007; first published 1995), 9.

[4] "Film on Atom War Bad for Children," *New York Times*, 21 November 1952, 329; cited in Cordle, 48.

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Association's Declaration of Helsinki in 1964). These public statements signal the progressive thrust of medical research, techniques and ethics in the postwar period. However, Robert Lowell's memorable description of the 1950s as a "tranquillized decade" offers an alternative view, suggesting that many civilians were unaware of nuclear, medical and political realities. On this reading, medical know-how jostled with profound ignorance, revealing confusion about the value of certain prescription medications and growing unease that drug treatments, promoted to cure everything from heart disease to schizophrenia, had not been thoroughly tested for side effects. Modern medicine was one of the wonders of postwar America, but medicine also wore a frightening mask during the Cold War, linking it to secrecy, science and the unknown.

One reason for these fears was that medicine was becoming increasingly centralized and exerted greater power over the public than before the war. Concerns about the centralization of power in the US were intensified with studies emerging in the mid-1950s such as C. Wright Mills's *The Power Elite* (1956), and have since been amplified in reinterpretations of the Cold War. In Ron Howard's film *A Beautiful Mind* (2001), for example, mathematician John Nash's schizophrenia is directly linked to the paranoid fear of hidden enemies. Nash was one of the most distinctive scientific figures in the mid-twentieth century – chiefly through his work on game theory – but he could also be seen as one of its victims, lost in the information overload of Cold War counterespionage. Nash's schizophrenia manifested itself in 1958 and he was committed to McLean Hospital in spring 1959 whilst working at MIT but liaising regularly with the Department of Defense as a code cracker (in the film to expose a Soviet plot). *A Beautiful Mind* implies strongly that Nash's participation in the Cold War arena exacerbated his illness. Rather than the encoded data adding up to a grand pattern it leads instead towards entropy, proliferating what Ben Williamson describes as further "codes from which nothing but noise can be deciphered and for which no key is available."[5] *A Beautiful Mind* exaggerates the parallels between social and clinical paranoia to reinforce the power of the "military–industrial complex," in a drama set several years before President Eisenhower used the phrase in 1961.

Stimulated by the recent renewed interest in the Cold War by scholars working in a range of disciplines, in this article I will examine a number of related medical, psychiatric and psychological trends and their roles within the Cold War theatre. The physical sciences were frequently championed as

[5] Ben Williamson, "Systems, Signs, and Pragmatism in Recent American Fiction," unpublished Ph.D. thesis (University of the West of England, 2007), 85.

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the pinnacle of human understanding at mid-century, but as Christopher Simpson, Ellen Herman and Ron Robin have all discussed it is through the lens of the human and medical sciences that some of the discursive complexities of the Cold War can be illuminated. There is a danger, as Joel Isaac cogently argues, that the Cold War context produces an "overly politicized and reductive account of the development of the human science disciplines," reducing a complex body of thought and practice to a version of national ideology.[6] With this warning in mind, and with the recognition that no single study can separate out the "thick and diverse bundle of genealogies" of postwar science, this article re-examines the role of medical science in the Cold War and traces its complex social operations.[7] I want particularly to analyse the ways in which medicine and psychology shaped Cold War policy, particularly between the dropping of the first atom bomb in 1945 and the McCarthy–Army hearings of 1954. To demonstrate how closely intertwined were medical and political issues in the early Cold War, the article focusses on four key aspects: first, medical testing on human subjects in postwar America; second, the relationship between the military strategies of the Pentagon and medical research; third, the medical implications of the atom bomb explosions on Hiroshima and Nagasaki; and fourth, psychological testing during the Korean War.

It is tempting to reread the Cold War as a foreshadowing of the culture of fear which many commentators, such as Naomi Klein and Tracy Davis, have detected in the United States in the years following 11 September 2001. But instead of adhering to Klein's claim in *The Shock Doctrine* (2007) that medical research of the 1950s was a form of "'shock and awe' warfare on the mind," this article relates mid-century medical practices to the phenomenology of the Cold War.[8] Developing the American psychiatrist Robert Jay Lifton's influential description of the "psychic numbing" of the Cold War and picking up on a series of recent books which examine a recurring engagement with the figure "zero" through the twentieth century, this article proposes that "zeroes" and "nothingness" were commonly used tropes in the early Cold War with direct links to both medical and philosophical concerns.[9] Jean-Paul Sartre had addressed the topic of "nothingness" at length in his

[6] Joel Isaac, "The Human Sciences in the Cold War," *Historical Journal*, 50, 3 (2007), 725–46, 728.
[7] Ibid., 746.
[8] Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (New York: Hyperion, 2007), 31.
[9] See, for example, Robert Kaplan, *The Nothing that Is: A Natural History of Zero* (Oxford: Oxford University Press, 2000); and Charles Seife, *Zero: The Biography of a Dangerous Idea* (London: Souvenir Press, 2000).

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existential work *Being and Nothingness* (1943), but rather than *le néant* leading to self-invention and freedom (as Sartre hoped), the trope of "zero" in the early Cold War was inflected by the threat of annihilation at the hands of technology. This approach is not to laden medical developments with a dead moral weight, but instead to argue that the intellectual and technological dimensions of postwar medicine are difficult to separate out.

It is easy, with hindsight, to exaggerate US paranoia during the Cold War, but there is enough evidence from the late 1940s and early 1950s to suggest that mistrust of institutions began soon after the end of World War II. Indeed, in 1947 Republicans were suspicious that Truman's plans to socialize health insurance meant that communists were working inside the health sector "in furtherance of the Moscow party line."[10] Cold War fears were often linked to metaphors of infection: for example, J. Edgar Hoover described communism as "an indoctrinal spray seeking to control every part of the member's heart, mind, and soul."[11] Whereas combat fatigue, common among soldiers in World War II, could be allayed by a period of rest, Cold War anxieties were insidious (and incurable) due to the invisibility of the threat.

The relationship between national and individual psychology has always been complex and is riddled with conceptual problems. Political scientist Harold Lasswell, for example, in his 1930 study *Psychopathology and Politics*, attempted to map national character onto an individual's "personality system." Lasswell advised psychologists not to think of the individual as a static "personality," but as a "manifold of events" which shuttle between personal and public worlds.[12] Two decades later, in 1951, psychiatrist Gregory Zilboorg similarly argued that we should avoid the idea that the mind is directly shaped by national conditions, claiming that "we are apt to fall into a little confusion whenever we wish to draw a close parallel between imperialistic statesmanship and psychotic self-centredness."[13] Nevertheless, titles such as *World Tension: The Psychopathology of International Relations* (1951), *The Russian Mind* (1952), *The Mind of the South* (1953) and the vogue for exploring the psychopathology of Hitler or Stalin suggest a blurring of individual psychology with political, national and regional categories, chiming with Ellen Herman's more recent claim that the Cold War offered "numerous variations

[10] Paul Starr, *The Social Transformation of American Medicine* (New York: Basic Books, 1982), 284.
[11] J. Edgar Hoover, *Masters of Deceit* (New York: Henry Holt, 1958), 168.
[12] Harold D. Lasswell, *Psychopathology and Politics* (Chicago: University of Chicago Press, 1930), 240–67.
[13] Gregory Zilboorg, "Out of Fear and Anguish," *New York Times*, 6 May 1951, Book Review, 4.

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on the World War II theme that war was a struggle for national and international psyches."[14]

The tendency to link national and individual psychology was also evident in a 1966 report by the Group for the Advancement of Psychiatry, which noted that during the Cold War actual warfare became "a less and less satisfying outlet for the release of aggressive impulses"; instead war became "impersonal and mechanized" and soldiers were at risk of transforming from heroes to drones.[15] In such a milieu, psychiatry and medicine were in danger of taking on a different hue as resources for strengthening Cold War resolve. Whereas good therapists should help their patients overcome feelings of dehumanization, what would normally be conceived as maladaptive responses – "increased emotional distance," a "diminished sense of personal responsibility," the "increasing involvement with procedural problems" – might prove to be strategically useful on a national level during times of war.[16] The Group for the Advancement of Psychiatry did not think medicine had been perverted along these lines. However, in the Cold War climate the political, ethical and therapeutic orientations of psychiatry and medicine were often thrown into conflict.

This range of unseen threats impacted on American life in variety of well-documented ways: the risks of invisible nuclear radiation; the fear of communist spies in the government, entertainment industry and science; and the suspicion that professionals whose job it was to help people were instead promoting conformity. Postwar medicine was seen by most as a social good, but this did not allay a growing unease that the health profession was working against individuals, creating a culture of dependency. Early in the 1940s Erich Fromm argued in *Escape from Freedom* (1941) that the individual's need for security often means that freedom is abandoned as anxiety-provoking or as a false goal. Rather than replacing authority with positive concepts of freedom, as Fromm recommended, often childlike dependency on authority – medical or otherwise – can provide comfort in times of unease.

The emphasis placed on the authority of science and medicine during the Cold War was the subject of a 1959 conference at West Point at which five hundred US Army scientists considered the importance of science in military affairs. The *New York Times* summarized the conference proceedings by

[14] Ellen Herman, *The Romance of American Psychology* (Berkeley: University of California Press), 124. See also Dee Garrison, *From Duck and Cover to Duct Tape: The Myth of Civil Defense in the Nuclear Age* (New York: Oxford University Press, 2006).

[15] *Psychiatry and Public Affairs: Reports and Symposia of the Group for the Advancement of Psychiatry* (Chicago: Aldane Publishing, 1966), 377–78.

[16] Ibid., 394–96.

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speculating that "post-graduate education in physics or medicine or working knowledge of information theory might now [even] be more valuable than … advanced Army planning."[17] Many universities realized that government funding could be won in the social sciences "on promises that deft applications … would improve state-sponsored ideological offensives."[18] This kinship between physical science and national defence was optimized by the Manhattan Project and the Los Alamos nuclear experiments, but the social and human sciences also had an influential role to play in the broader Cold War arena.

Detailed evidence for medicine being coopted for Cold War interests was not available until the mid-1990s when President Clinton established an Advisory Committee on Human Radiation Experiments to investigate the rumours of human testing in the 1950s. Back in 1948, health crusader Albert Deutsch celebrated the fact that conscientious objectors had "submitted themselves as voluntary guinea pigs for wartime medical experiments that sped up important life-saving and disease-fighting discoveries."[19] But documents declassified in the 1990s tell a different story. In 1999 Eileen Welsome published her Pulitzer Prize-winning report about plutonium injections given to twelve "nuclear guinea pigs," while other research reveals that four thousand experiments on American citizens were conducted with federal backing between 1944 and 1974 to investigate radiation burns.[20] Questions of bioethics are closely linked to the covert nature of these experiments. In the case of flash-burn experiments in Richmond, Virginia, the initial stimulus for surgical consultant Everett Evans was to enable medics to treat burns in the event of a Soviet attack. Burn therapy had been taken seriously since Pearl Harbor, with doctors ensuring patients received the right vitamins for recovery and working hard to prevent infection.[21] However, although volunteers in the flash-burn experiments received financial rewards, there were ethical considerations at stake in testing burns on the arms of poor black college students, hospitalized patients and inmates of state penitentiaries. The press gave a positive spin to medical research on prisoners, but the use of inmates was worrisome as it contravened the Nuremberg Code established

[17] Robert K. Plumb, "Parley Stresses Science in Army," *New York Times*, 28 June 1959, 4.
[18] Christopher Simpson, ed., *Universities and Empire: Money and Politics in the Social Sciences during the Cold War* (New York: The New Press, 1998), xvii.
[19] Albert Deutsch, *The Shame of the States* (New York: Harcourt, Brace & Co., 1948), 166.
[20] See Eileen Welsome, *The Plutonium Files: America's Secret Experiments in the Cold War* (New York: Random House, 1999).
[21] See Oliver Cope, "The Burn Problem," in E. C. Andrus et al., eds., *Advances in Military Medicine*, Volume I (Boston: Little, Brown, 1948), 149–58.

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to prevent a repeat of the atrocities practised by the Nazis, such as blast tests on camp prisoners in Buchenwald.[22] The medical historian Susan Lederer, in her account of burn research, concludes that Evans's experiments were fired by "cold war zeal" rather than "scientific arrogance," but it leads her to wonder about the human and ethical cost of such experiments.[23]

The close relation between science and the military after World War II gives weight to the notion that psychiatry and medicine were increasingly part of the micropolitics of power, to use a Foucauldian phrase. At the time it was thought that a close link between the military and psychology was advantageous: for example, the RAND Corporation dealt with strategic issues with the assistance of cybernetics and game theory, breaking down potential scenarios into analysable variables and using computers to construct mathematical models.[24] Follow-up tests on World War II veterans by psychologists and health workers were part of a broader culture of government-sponsored activity, particularly during the first two years of Eisenhower's presidency when new committees were established to improve overseas propaganda and the effectiveness of psychological warfare, even if it meant concealing or eliminating the "hand of government."[25] Although Eisenhower disliked the term "psychological warfare," Kenneth Osgood argues that it was deeply embedded in his foreign policy. This was not without public notice, though, as demonstrated by the March 1953 issue of *The Reporter*, entitled "What about this Psychological Warfare?". A month earlier, Eisenhower's secretary of defense Charles E. Wilson had signed off a memorandum to establish a protocol for using human subjects in scientific experiments, putting distance between Pentagon policy and medical investigators to safeguard independent research.[26]

[22] Susan E. Lederer, "Darkened by the Shadow of the Atom: Burn Research in 1950s America," in Wolfgang U. Eckart, ed., *Man, Medicine, and the State: The Human Body as an Object of Government Sponsored Medical Research in the 20th Century* (Stuttgart: Franz Steiner Verlag, 2006), 267.

[23] Ibid., 273. Lederer points out that the RKO film *Experiment Alcatraz* (Edward L. Cahn, 1950) stresses the voluntary nature of radiation experiments, carried out in return for freedom.

[24] James H. Capshew, *Psychologists on the March: Science, Practice, and Professional Identity in America, 1929–1969* (Cambridge: Cambridge University Press, 1999), 169–71.

[25] Dwight D. Eisenhower to William Benton, 1 May 1953, cited in Kenneth Osgood, *Total Cold War: Eisenhower's Secret Propaganda Battle at Home and Abroad* (Lawrence: University Press of Kansas, 2006), 77.

[26] See Jonathan D. Moreno, "'The Only Feasible Means': The Pentagon's Ambivalent Relationship with the Nuremberg Code," *The Hastings Center Report*, 26, 5 (Sept.–Oct. 1996), 11.

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Even so, in the screening of recruits during the Korean War and the extension of atomic experimentation beyond the realm of animals (most often mice, rats, pigs and dogs), psychologists and medical researchers undoubtedly became accomplices in a Cold War power game. John C. Flanagan's edited volume *Psychology in the World Emergency* describes the situation well: "not only are the military services taking the lead on problems of personnel selection and classification but they are also sponsoring the major studies in the fields of learning, training devices, proficiency measurement, attitudes, leadership, management problems, operating procedures, systems analysis, and job design."[27] This 1952 study focusses firmly on the "world emergency" and suggests that sponsored psychological and medical research was necessary for national security.

There is little hard evidence to suggest that the Pentagon, after its completion in 1943, was actively involved in a cover-up campaign to hide scientific and medical testing deployed in the name of national security. But there is enough evidence, as Lori Bogle argues in *The Pentagon's Battle for the American Mind*, that the military were entrusted with building "a resolute national will" using "new psyops," or psychological warfare policies, in the stand-off against communism.[28] While Voice of America (est. 1940) and Radio Free Europe (1949) provided broadcasting channels for democratic propaganda, "psyops" were linked to covert operations and occluded methods of agitation but often veered into the realm of public diplomacy as well.[29] Margaret Mead and Gregory Bateson were concerned that psychological warfare during World War II had "terrible possibilities of backfiring" (as Mead noted in 1962); Schlesinger worried that such methods were incompatible with the "freedom" of democratic nations (noting that it linked to forms of "fanaticism" more akin to totalitarian states); and others treated the word "warfare" with scepticism when used "in the absence of overt hostilities."[30] More recently, Christopher Simpson has studied the

[27] John C. Flanagan, "Psychology in the World Emergency," in John C. Flanagan et al., eds., *Psychology in the World Emergency* (Pittsburgh: University of Pittsburgh Press, 1952), 14.

[28] Lori Lyn Bogle, *The Pentagon's Battle for the American Mind: The Early Cold War* (College Station, TX: Texas A&M University Press, 2004), 94.

[29] See Michael Nelson, *War of the Black Heavens: The Battles of Western Broadcasting in the Cold War* (Syracuse: Syracuse University Press, 1997).

[30] Margaret Mead, "The Social Responsibility of the Anthropologist," *Journal of Higher Education*, 33, 1 (Jan. 1962), 7; Arthur Schlesinger Jr., "Psychological Warfare: Can It Sell Freedom?", *The Reporter*, 8, 7 (31 March 1953), 9–12, 11; Robert T. Holt and Robert W. van de Velde, *Strategic Psychological Operations and American Foreign Policy* (Chicago: University of Chicago Press, 1960), v. See also Murray Dyer, *The Weapon on the Wall: Rethinking Psychological Warfare* (Baltimore, MD: Johns Hopkins University Press, 1959).

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US Army's definition of "psychological warfare" from 1948 (information officially classified until the late 1980s), as a technique which employs all

> moral and physical means [as a] weapon to influence the mind of the enemy … In this light, overt (white), covert (black), and gray propaganda; subversion; sabotage; special operations; guerrilla warfare; espionage; political, cultural, economic, and racial pressures are all effective weapons. They are effective because they produce dissension, distrust, fear and hopelessness in the minds of the enemy …[31]

After consulting a range of other previously classified National Security Council documents, Simpson adds that the idea of "plausible deniability" was also upheld "to permit the government to deny responsibility for 'black' operations."[32] We will see later how closely psyops were used in the Korean War, but it was not only psychology that became hijacked in the milieu of the Cold War.

There is scant evidence in mainstream newspapers from the mid-1940s and the 1950s to link scientific and medical experiments directly to the Department of Defense. However, declassified information suggested that up to half a million Americans were subject to medical testing between 1940 and 1965. Evidence arose not only about the burn and plutonium tests, but boys at the Walter E. Fernald State School in Waltham, Massachusetts (formerly Massachusetts School for Idiotic Children) had been fed radioactive cereal between 1946 and 1953; in the 1960s cognitively disabled children were infected with a hepatitis strain at Willowbrook State School on Staten Island (a place Robert Kennedy described as a "snake pit" in 1965) at the same time that children at DC Children's Center in Laurel, Maryland were being tested with the diet pill NeoBazine; and the Army Chemical Corps had in 1956 released mosquitoes carrying yellow fever near black communities in Georgia and Florida; and a radiologist at the University of Cincinnati had been sponsored by the Department of Defense to experiment with total-body radiation on cancer patients.[33] Previously classified information makes clear that disabled children, the poor and African Americans were the most vulnerable subjects of medical experimentation; equally clear is that, despite Charles Wilson's memo of 1953, the Pentagon's willingness to stretch the

[31] US Department of Army, Joint Strategic Plans Committee, *JSPC 862/3*, 2 Aug. 1948, US National Archives; cited in Christopher Simpson, *Science of Coercion: Communication Research and Psychological Warfare, 1945–1960* (New York: Oxford University Press, 1994), 12.

[32] Ibid., 13.

[33] See Carol Rutz, *A Nation Betrayed: Secret Cold War Experiments Performed on Our Children and other Innocent People* (Grass Lake, MI: Fidelity Publishing, 2001), xiii–xv. For the place of cancer in the Cold War see Gerald Kutcher, *Contested Medicine: Cancer Research and the Military* (Chicago: University of Chicago Press, 2009); and Ellen Leopold, *Under the Radar: Cancer and the Cold War* (New Brunswick, NJ: Rutgers University Press, 2009).

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terms of the Nuremberg Code raised far-reaching ethical questions about medical, psychological and scientific experiments pursued in the name of national defence.[34]

On this reading, if the Pentagon was the supreme Cold War symbol of the nation as a strong fortress, then it was also a symbol of the power alliance between the military and government: a "megamachine," as Lewis Mumford outlined in 1970. The geography of the Pentagon was based on a rational geometrical system, but in 1944 the *New York Times* pictured the military headquarters as a "mammoth cave" containing "the gigantic brain cell of the Army."[35] In the middle of the Pentagon's labyrinth of numbered corridors was an open space with a café where workers went for breaks. This became known as "ground zero" when it was reputed that the Soviets had missiles trained on the space, suggesting that the Cold War logic went far beyond official business to invade leisure time as well. The criticism of the Pentagon in the *New York Times* was muted, but the questioning of centralized power grew slowly in the 1950s and more rapidly in the 1960s, leading Norman Mailer in *Armies of the Night* to identify the building as the supreme symbol of authority and power over all Americans, its "geometrical aura" representing the nation's "schizophrenia." As Mailer saw it, the Pentagon may appear to be a geometrical rational construct from the outside, but it hid powerful and potentially "insane" forces within.[36]

These destructive forces sometimes took on the guise of exhaustion from data overload (as John Nash experiences in *A Beautiful Mind*), but often linked to fears that science posed a danger to an individual's identity. Back in the mid-1940s these fears raised moral concerns for the Manhattan Project scientists working at ground zero and provoked aesthetic questions for abstract expressionist painters. Even before the bomb was dropped Mark Rothko and Adolph Gottlieb were claiming that "all primitive expression reveals the constant awareness of powerful forces, the immediate presence of terror and fear, a recognition and acceptance of the brutality of the natural world as well as the eternal insecurity of life."[37] One aim of the nuclear experiments was to generate alternative forms of energy, but the moral consequences of Hiroshima – not really felt in the United States until after

[34] See Moreno, 11–19.

[35] "Mammoth Cave, Washington, D.C.," *New York Times*, 27 June 1943, Sunday Magazine, 8.

[36] Norman Mailer, *Armies of the Night* (New York: Plume, 1994; first published 1968), 135, 125. For a discussion of Mailer's masculinist rhetoric see K. A. Cuordileone, *Manhood and American Political Culture in the Cold War* (New York: Routledge, 2005), 163–64, 190–91.

[37] Interview with Rothko and Gottlieb, 13 April 1943, cited in Clifford Ross, ed., *Abstract Expressionism: Creators and Critics* (New York: Harry N. Abrams, 1990), 212.

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John Hersey's *New Yorker* publication of August 1946 – revealed the brutality and insecurity of which Rothko and Gottlieb had written three years earlier. The power of the bomb did not just destroy a whole city but could potentially "burn up in an instant every creature," as a *Reader's Digest* editor wrote in December 1946. This tone was very different from the support of the American press for the dropping of the bomb. Where concerns were expressed they tended to be less about the bomb's immediate consequences and more "its future use elsewhere and specifically against ourselves and our children."[38]

Debates between the government and scientists involved in the Manhattan Project reveal reservations at an early stage: Niels Bohr and Leo Szilard argued that the bomb's explosive power should be demonstrated before all nations and J. Robert Oppenheimer, chair of the Atomic Energy Commission, argued for international arms controls in 1946. Almost a decade later, and a year after he had had his security clearance revoked, Oppenheimer spoke to Edward R. Murrow about his nuclear concerns. In his 1955 interview with Murrow, Oppenheimer said,

> The genetic problems, the problems that might happen in the future to the human species as a result of having radioactivity in the body or having radiation outside, the geneticists don't know enough to be sure enough of that. We do know what happens if you are near a bomb explosion, we know that from experience and common sense. The things we know ought to be in the public domain … the things that aren't known should be talked about because one of the ways to get things found out is to have it clear that we don't know the answers and, also, one of the ways to give people the kind of responsibility and humanity which we would like to think we have is to recognize when they don't know something.[39]

As Oppenheimer made clear, whilst the bomb's potential for mass obliteration profoundly influenced Cold War civil defence activities, the fact that it could affect individuals in visceral ways – burns, mutilation, sickness, death (especially for those living downwind from the Nevada test site) – meant that its sway over the material lives of citizens was much greater than Truman or Eisenhower acknowledged.

[38] Diana Preston, *Before the Fallout: From Marie Curie to Hiroshima* (New York: Walker & Company, 2005), 312. See also Paul S. 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; first published 1985).

[39] Ed Murrow, *See It Now* conversation with Oppenheimer, Institute of Advanced Study, Princeton University (CBS, 4 Jan. 1955). The extended forty-five-minute discussion was intended for use in universities, but edited for broadcast. The complete recording is available in the Motion Picture Reading Room, Library of Congress, Washington, DC.

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John Hersey's *Hiroshima* and the army documentary *Atomic Medical Cases* (1949) provided detailed accounts of the bomb blasts, but this was at odds with a number of government-sponsored films released in the early 1950s, including an instructive twenty-minute film made by the Armed Forces Special Weapons Project, *The Medical Aspects of Nuclear Radiation* (1950). Shot in colour, this film tries to dispel some "falsehoods" about radiation in the media, by rehearsing the safety of nuclear science, the wisdom of medical authorities and the expectancy that "radiation patients" can be effectively treated through blood transfusions and penicillin. The film suggests that media have given distorted accounts of hair loss, impotence and genetic mutations, spreading fears through "sensational speculation about what radiation can do."[40] The narrator counters these fears by claiming that most deaths and injuries in Hiroshima resulted directly from the blast rather than from radiation sickness. He estimates that sickness represents only 15 percent of the danger of the atom bomb, but bizarrely claims it causes 85 percent of nuclear fears. The film promotes realism, caution and preparedness (healthy eating, bodily cleaning and rehearsing safety drills), and claims that "sound medical practice demands not only a knowledge of the way harmful agents operate, but an accurate estimate of those agents."

The impact of the atom bomb upon sickness and health was more profound than anyone acknowledged, even for medical scientists in Japan. After initial research in autumn and winter 1945, an Atomic Bomb Casualty Commission (ABBC) was set up in 1946 as a joint initiative between the US National Academy of Sciences and the Japanese Health Institute. Between 1946 and 1974 the ABBC investigated the genetic impact of ionizing radiation in Hiroshima and Nagasaki, research that was carried into the 1990s by the Radiation Effects Research Foundation (RERF), part-funded by the Atomic Energy Commission, which Oppenheimer had chaired in its early days. Initial problems of a flood that hit Hiroshima in September 1945 and an overly bureaucratic Japanese government delayed the research, problems which were compounded by the nature of the task. The authors of a 1991 report *The Children of Atomic Bomb Survivors* made clear that the research was bound to be lengthy given that genetic abnormalities are often recessive and that cases of leukaemia and radiation-induced cataracts, experienced by 2·5 percent of survivors "within 1000 meters from the hypocenter" of the blast, often had a latency period of up to two years.[41]

[40] *Medical Aspects of Nuclear Radiation* (Cascade Picture, 1950), included in *Atomic War Bride and This is Not a Test* (Something Weird Video, 2002).

[41] *The Atomic Bomb Casualty Commission, 1947–1975* (Japanese National Institute of Health of the Ministry of Health and Welfare, 1978), 17.

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It was also almost impossible to gauge how much radiation a particular parent had been exposed to, or how many bomb victims died from radiation alone as oppose to a sublethal dose linked to other physical injuries. A 1947 report on "Genetic Effects of the Atomic Bombs in Hiroshima and Nagasaki" noted that "there is no general agreement as to what proportion of cases of abnormal fetal development is genetically determined, and what proportion is due to nongenetic factors."[42] And other forces had to be considered: Hiroshima had been hit by a uranium bomb and Nagasaki by a plutonium bomb, and Japan had introduced more liberal abortion laws in the early 1950s which saw a decline in the birth rate, to name but two.

There was much misinformation about the research findings. The first studies of the ABBC project focussed on genetic defects in children of atomic survivors and had to contend with "grossly exaggerated predictions concerning the fate of [the Japanese] children."[43] At the same time the US Armed Forces were carrying out their own research on the biological, pathological and psychological effects of the blasts, on the assumption that America's enemies could return atomic hostilities.[44] Tensions between Japanese and American scientists were inevitable after 1945; Japanese scientists were suspicious that medical findings would be distorted to meet the demands of Washington. In addition, the Science Council of Japan pointed out that an assessment of physical damage of blast injuries, thermal burns, keloid scars, cataracts, depigmentation, haemorrhaging, leukaemia and longer-term effects of radiation in prenatal illness overlooked profound psychological issues that could not easily be quantified: "psychologically, the victims were burdened with almost inconsolable hopelessness and anguish – which have been termed 'keloid of the heart' and 'leukaemia of the spirit'."[45] If the initial impact of the bomb was the obliteration of the body, then it also destroyed the soul of the cities.

In his 1963 article "Psychological Effects of the Atomic Bomb in Hiroshima," Robert Jay Lifton shifted the focus of the bomb blasts from bodies to minds. Rather than an event that concerned a relatively small number of Japanese victims, Lifton believed that the aftershock of the bomb was devastating to all humanity. "Since these consequences now inhabit our

[42] National Research Council, "Genetic Effects of the Atomic Bombs in Hiroshima and Nagasaki," *Science*, 106, 275 (10 Oct. 1947), 331; republished in James Y. Neel and William J. Schull, *The Children of Atomic Bomb Survivors: A Genetic Study* (Washington, DC: National Academy Press, 1991), 9.

[43] Neel and Schull, 2.

[44] See "Medical Aspects of Nuclear Energy" (Armed Forces Special Weapons Project, National Military Establishment, 1949), the National Library of Medicine, Bethesda, MD.

[45] Ibid., 13–14.

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world," Lifton wrote, "more effective approaches to the problem of human survival may well depend on our ability to grasp the nature of fundamentally new relationships to existence which we all share."[46] Although existential themes were common in detective fiction, film noir and abstract painting in the late 1940s and early 1950s, for Lifton the violence, horror and absurdity of Hiroshima had a sharper existential charge.

Lifton carried out research on the psychological consequences of Hirsohima whilst living in Japan in the 1950s, published in the extended treatment *Death in Life: Survivors of Hiroshima*. Taking his lead from existential psychology, Lifton wrote that after the atom bomb blast "there was a widespread sense that life and death were out of phase with one another, no longer properly distinguishable – which lent an aura of weirdness and unreality to the whole city."[47] Lifton sensed that the bomb had fundamentally disturbed human ontology, creating an "unnatural order" and changing the rules separating life from death by obliterating those close to the hypocentre, by erasing the city and by "closing off" the survivors to outward stimuli, leading to genetic mutations, loss of language and immense feelings of guilt and self-hatred. Moreover, Lifton noted that many Japanese survivors saw themselves as guinea pigs in, and even racial victims of, a US scientific experiment.

Importantly, Lifton's work in Japan was developed in his study of psychological warfare in the Korean War. A number of books were published on the subject of mind-control experiments in the late 1970s, many of them for a popular readership. While there have been numerous exaggerated and sensationalist accounts, such as the brainwashed American soldier returning home from Korea in the 1962 film version of *The Manchurian Candidate*, it has been proven that the Office of Strategic Services was experimenting during World War II with mind-control and truth drugs such as marijuana, mescalin and LSD. Due to the atrocities of the Nazi concentration camps, the Nuremberg Code was established in 1948 to ensure that participation in any medical tests was voluntary. Nevertheless, with perceived communist threats mounting, the CIA developed widespread experiments after 1949, not always using volunteers. The Korean War was in many ways a conventional war of bodies, but the fact that both the Americans and Chinese were practising psychological warfare places it squarely within a Cold War context. The US Army created the Office of the Chief of

[46] Robert Jay Lifton, "Psychological Effects of the Atomic Bomb in Hiroshima: The Theme of Death," *Daedalus* (Summer 1963), 462–97.

[47] Robert Jay Lifton, *Life in Death: Survivors of Hiroshima* (New York: Random House, 1967), 23.

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Psychological Warfare, which focussed efforts on radio broadcasts in Chinese and Korean, and the University of Pennsylvania, University of Washington, Tulane University and McGill University all took part in experiments (linked to the CIA in the case of McGill) with drugs, sensory isolation, shock treatments, hypnosis, narcotherapy and psychic depatterning, or "brainwashing" as the journalist Edward Hunter called it in 1950.[48] Primarily linked to Chinese and Soviet practices, these techniques also became part of the US Cold War armoury, even though Eisenhower professed his dislike for psychological warfare.

Articles started to appear not long after World War II which suggested that, under the leadership of the Psychological Warfare Division, psychiatry was being used "perversely to produce drastic changes" in attitudes and belief systems; in the words of Major Henry Segal, chief of neuropsychiatric evaluation in the Army Medical Corps, "psychiatric principles and techniques were being utilized … destructively in a deliberate, coldly calculated, highly systematized attempt to produce a state of mental aberration detrimental to the individual concerned and of value only to the Communists."[49] US investment in psyops was based on evidence that brainwashing had been practised on American POWs, making them into human zeroes and even, as *The Manchurian Candidate* has it, secret assassins.

Lifton went to Korea and Hong Kong to examine reports of psychic depatterning amongst repatriated soldiers. Lifton's article "Home by Ship" was published in April 1954, six months before Segal's survey.[50] He was convinced that brainwashing had been practised widely on American POWs and he later developed the concept of "totalism" to describe the environment of mind control. "Totalism" semantically linked to totalitarianism (to which Schlesinger had explicitly connected psychological warfare in 1953) and to "many less extreme activities" which Lifton identified in postwar America, such as advertising, control of teaching materials and other explicit and covert forms of indoctrination and re-education. Lifton noted that press coverage about reports of brainwashing was often unhelpful, "sensationalist

[48] See Ron Robin, *The Making of the Cold War Enemy: Culture and Politics in the Military–Industrial Complex* (Princeton: Princeton University Press, 2001), 101–23; and Harvey M. Weinstein, *Psychiatry and the CIA: Victims of Mind Control* (Washington, DC: American Psychiatric Press, Inc., 1990), xviii, 132.

[49] Henry A. Segal, "Initial Psychiatric Findings of Recently Repatriated Prisoners of War," *American Journal of Psychiatry*, 111, 5 (Nov. 1954), 358–63, 358. See also Edgar H. Schein, "The Chinese Indoctrination Program for Prisoners of War: A Study of Attempted 'Brainwashing'," *Psychiatry*, 19 (1956), 149–72.

[50] See Robert Jay Lifton, "Home by Ship: Reaction Patterns of American Prisoners of War Repatriated from North Korea," *American Journal of Psychiatry*, 110, 10 (April 1954), 732–9.

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in tone, distorted because of inadequate knowledge, or obscured by strong emotions which the concept of brainwashing seems to arouse in everyone."[51]

After interviewing American, European and Chinese subjects, Lifton realized that generalizations across national groups were hard to sustain. But what he found amongst many of his Western subjects was a disconnection on returning home, a sense of unrest and forms of repetition compulsion. Lifton saw in these numb emotional responses a struggle for self-mastery and a sense of mourning for some lost facet of identity. Returning home proved especially difficult for those who had been in East Asia the longest; rather than being able to start afresh on arriving home many were forced to confront "archaic parts of themselves," elements of identity "long denied, repressed, or modified beyond easy recognition."[52] The mind experiments to which many were subjected complicated this sense of return, creating a struggle between their past and present selves and unlocatable feelings of existential dread.[53]

One of Lifton's conclusions was that "the control of human communication" was central to the success of thought reform. This kind of "milieu control" can be brought about through coercion, but at its most successful it convinces the subject that he or she is acting spontaneously while actually being directed by an internalized set of principles alien to the subject's own value system. For Lifton, such a controlled environment disrupts the "balance between self and the outside world," resulting in "a profound threat to personal autonomy."[54] It no longer becomes possible to discern truth from false confessions ("crimes one has not committed," "sinfulness that is artificially induced") or to separate fantasy from reality.[55] Confession can be therapeutic in offering relief from guilt, but it can also exacerbate deeper primitive complexes and obliterate social realities. "Total exposure" means that individuals lose their inner defences against the milieu, the ego

[51] Robert Jay Lifton, *Thought Reform and the Psychology of Totalism: A Study of "Brainwashing" in China* (New York: Norton, 1961), 5.

[52] Ibid., 228.

[53] There are other arguments to suggest that Western POWs in Korea behaved no differently to those captured in other wars, as initial disorientation and blankness of response often wore off after repatriation. But Lori Bogle and other critics counter this by pointing to the twenty-one American prisoners (as well as one British and over three hundred South Korean POWs) who made the decision to stay in communist China after being released. See Bogle, *The Pentagon's Battle for the American Mind*, 119–26. Eisenhower dismissed these experiences as a symptom of inadequate preparation for war and encouraged the military to raise patriotism by pressing for a Code of Conduct in 1955.

[54] Lifton, *Thought Reform and the Psychology of Totalism*, 421.

[55] Ibid., 425.

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boundaries weaken and the environment takes over. Not only does this exacerbate a culture of secrecy, with guilty secrets fused with misinformation (as it does for John Nash in *A Beautiful Mind*), but in extreme cases the self becomes a cipher devoid of meaning.

Lifton's aim was not to participate in a blame game, nor to identify pockets of antiscientific zealotry (Joseph McCarthy's "blend of political religion and extreme opportunism") or expressions of political re-education at home (William F. Buckley's recommendation in 1951 that alumni should decide on university syllabi). Lifton's main concern was that the institutionalization of psychiatry – "a combination of personal therapy, professional instruction, and organizational influence" – was in danger of becoming a form "milieu control" or quasi-religion to which the subject surrenders himself.[56] While the emphasis on psychic numbing and victimhood in Lifton's thought has led to criticism, he did succeed in pointing out that psychiatry and psychoanalysis during the Cold War not only risked creating a culture of dependency but helped to reinforce social conformity.[57]

Just as the responses to the development of the atom bomb gave way to profound questions about the role of American science in the late 1940s and the 1950s, so a consideration of medicine and psyops in the Korean War led to similar fears. It was the "deification" of science, the "expectation that science will supply a complete and absolutely accurate mechanistic theory of a closed and totally predictable universe," that worried Oppenheimer, Lifton and others.[58] While the Group for the Advancement of Psychiatry was arguing in 1966 that the "budgets, organizations, and technology that can destroy mankind can also produce the most constructive achievements in world history," the optimism of the Group was compromised by the fact that science, medicine, psychiatry and psychoanalysis were all caught up in the ideological matrix of the Cold War.[59] At a time when Harold Lasswell was calling for "a proper balance between national security and individual freedom," the covert nature of top-secret psyops projects was justified in the name of national defence, but also blurred the lines between ethical medical practices and counterespionage.[60]

[56] Ibid., 447–48.

[57] See Offer Zur, "On Nuclear Attitudes and Psychic Numbing: Overview and Critique," *Contemporary Social Psychology*, 14, 2 (June 1990), 96–118.

[58] Ibid., 458.

[59] *Psychiatry and Public Affairs*, 398.

[60] Harold D. Lasswell, *National Security and Individual Freedom* (New York: McGraw-Hill, 1951), 1. For CIA mind-control projects see John Marks, *The Search for the "Manchurian Candidate": The CIA and Mind Control* (New York: Times Books, 1979), 21–33.

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The main problem was not that science and medicine were swayed by the technical priorities of the Cold War, but that dangerous ethical issues arose which compromised the Nuremberg Code and brought medical activities into proximity with experiments carried out under fascism and communism. No longer was medical science the agent of hope that Assistant Secretary of State W. W. Butterworth proclaimed at the International Society of Surgery Conference held in New Orleans in 1949, but within the theatre of the Cold War it veered dangerously close to becoming an agent of fear.[61] This blurring of existential boundaries is a trait that Lifton and Engelhardt each identified, taking us beyond the public performance of civil defence to a consideration of ontological, epistemological and ethical questions.

Carl Jung stated in a 1959 interview that in a world of "technical efficiency" individuals will always try to "assure their existence against that complete atomization into nothingness or meaninglessness," but two years later, in 1961, Lifton reminded the reader that the "god-pole" of science in its search for total control is not the opposite of its "devil-pole" in its potential for destruction, but the two exist co-dependently, each "equally misleading and dangerous in their extremism."[62] Even if we reject Lifton's overarching category of "psychic numbing," it is hard to ignore concerns about the militarization of medicine during the Cold War. Without a version of the Nuremberg Code to curb the potential for science to go unchecked, Cold War activities did not so much revolve around a "vital center" but veered towards a state of disequilibrium, in which medical research was at risk of ideological cooption and the individual was in danger of becoming – to recall Norman Mailer's famous warning – a zero, a cipher "in some vast statistical operation."[63]

[61] John H. Popham, "Atom Held 'Feeble' in Light of Science," *New York Times*, 11 Oct. 1949, 33. Naomi Klein uses the phrase "science of fear" in *The Shock Doctrine*, 38–46.

[62] Jung interview broadcast on *Face to Face: Professor Jung* (BBC, 1959). Lifton, *Thought Reform and the Psychology of Totalism*, 459.

[63] Norman Mailer, "The White Negro" (1957), in *Advertisements for Myself* (London: Flamingo, 1994; first published 1959), 282.

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