

In the Spring 2007 issue of *JHBS* discussion pieces by Thomas Blass and by Richard E. Brown were published that were critical of allegations made by Alfred W. McCoy (in his 2006 book *A Question of Torture*) that Donald O. Hebb and Stanley Milgram conducted studies of psychological interrogation that were linked to the CIA. Below is Professor McCoy's response to his critics.

## SCIENCE IN DACHAU'S SHADOW: HEBB, BEECHER, AND THE DEVELOPMENT OF CIA PSYCHOLOGICAL TORTURE AND MODERN MEDICAL ETHICS

ALFRED W. MCCOY

In August 2006, the U.S. Army's surgeon general, General Kevin Kiley, appeared before the national convention of the American Psychological Association (APA) dressed in full combat uniform to defend the participation of psychologists in interrogation. "Psychology," he declared, invoking a military maxim that many present may have found unsettling, "is an important weapons system" (Levine, 2007; Lewis, 2004).

For over half a century, from the Cold War to the War on Terror, psychology has served the U.S. intelligence community as a secret weapon in wars against its ideological enemies, first communism and now Islamic fundamentalism. From the start of the Cold War, the U.S. intelligence community has lavished rewards on the psychology profession, both generous funding for experimental researchers and employment for clinical specialists, producing a variant of what psychiatrist Robert Lifton has called a "Faustian bargain." In this case, the price paid has been the APA's collective silence, ethical "numbing," and over time, historical amnesia (Lifton, 1986, pp. 418–419).

Illustrative of this latter phenomenon, only months after General Kiley's extraordinary address to the APA, the *Journal of the History of the Behavioral Sciences* published a discussion by two psychologists that, instead of debating these ethical issues or probing this troubled past, engaged in a collective attack on a study that tried to break this silence over the CIA's patronage of cognitive science—my recent book, *A Question of Torture*. In a disjointed 15-page critique, the psychologist Richard Brown accused me, incorrectly, of fabricating text to lend credibility to his catalogue of my supposed scholarly derelictions.<sup>1</sup> Moreover, in defending

1. In his attack on my work, Richard Brown accuses me, falsely, of misquoting the title of an article to somehow strengthen my book's argument, when, ironically, it is he who is guilty of this scholarly sin. In the midst of a long list of my supposed errors, which are inferential and thus inconclusive, Brown, on page 206, tries to nail me with an actual factual error: "The reference to a newspaper article by Michael Ignatieff . . . gives the wrong title. The title is 'What did the CIA do to Eric Olson's Father.' . . . McCoy's footnote 47 (p. 35) however, makes it seem that this has to do with Hebb and the misquotation of the title as 'What Did the CIA Do to his Father' does not indicate the true nature of the article." In sum, Mr. Brown is accusing me, not of a simple typo, but of knowingly twisting text to somehow reinforce my argument. However, the original, and thus authoritative title of that article as published in *The New York Times Magazine* (1 April 2001) reads on both page 8 (table of contents) and page 56 (where the article appears), just as I cited it in my book, "What Did the C.I.A. Do to His Father?"

ALFRED W. MCCOY is the J. R. W. Smail Professor of History at the University of Wisconsin-Madison. His first book, *The Politics of Heroin in Southeast Asia* (New York, 1972), survived attempts by the CIA to block its publication and has remained in print for 35 years, with three English-language editions and nine foreign-language translations. His book *Closer Than Brothers: Manhood at the Philippine Military Academy* (New Haven, 1999), explored the impact of torture on that country's armed forces, foreshadowing themes developed more fully in his recent work, *A Question of Torture: CIA Interrogation, From the Cold War to the War on Terror* (New York, 2006).

his uncritical assessment of Donald O. Hebb as one of the “most eminent” psychologists of the twentieth century, Brown, who is Hebb’s biographer, cited newspaper articles and an official Canadian inquiry to deny that his subject had any role in the CIA’s mind-control research (Brown & Milner, 2003; Brown, 2007, pp. 205–213). Sadly, a less tendentious review of these same sources establishes the very opposite—that Hebb was, just as I explained in my book, a longtime principal in the CIA’s pursuit of a new paradigm for psychological torture.

In an equally determined defense of “one of the outstanding figures of twentieth-century psychology,” another biographer, Thomas Blass, muddles simple matters of fact to defend his subject, Stanley Milgram, from even the possibility that U.S. funding for the famed obedience experiments might have come from the CIA’s multifaceted mind-control project (Blass, 2007, pp. 199–203). Most important, reflecting the psychology profession’s ethical numbing over this past, neither biographer paused to consider the trauma inflicted by these cruel experiments, nor did they explore the larger reasons for and uses of this research.

In understanding how state imperatives can corrupt medical ethics, Lifton notes that “the Nazis were not the only ones to involve doctors in evil,” citing “the role of . . . American physicians and psychologists employed by the Central Intelligence Agency in the recent past for unethical medical and psychological experiments involving drugs and mind manipulation.” Although Lifton’s work was published 20 years ago, his “recent past” is still, as we have seen at Guantánamo Bay, our present plight (Lifton, 1986, p. xii).

Clearly, we need to move beyond pedantic charge and countercharge for a broader perspective on this dark period and its development of psychological torture. If this breakthrough had conventional instead of covert uses, then this hidden past and its secret search for new forms of interrogation might have become one of those heroic, history-of-science narratives of the brilliant scientist, working alone or besting rivals known and unknown, to capture the crown of discovery with all its recognition and reward. Just as the discovery of natural selection supposedly became a race between Charles Darwin and Alfred Wallace or the development of the polio vaccine a rivalry between Jonas Salk and Albert Sabin, so the CIA’s development of psychological torture can be reduced to a narrative of competing approaches by two titans of twentieth-century medical science—Henry K. Beecher’s drug experimentation versus Donald O. Hebb’s behavioral methods (Oshinsky, 2005, pp. 4–7, 174–187; Slotten, 2004, pp. 1–9; Shotland & Yeo, 1996, pp. 1–44; Hellman, 1998, pp. xii–xv). For both, there was a fortuitous convergence between the CIA’s mind-control project and their own research trajectories, providing them, at the cost of the ethical compromises inherent in classified work, needed funding for the human experimentation central to their research and rising reputations—hence the Faustian bargain.

Although research into psychological torture was indeed a dark science, it was science nonetheless and has a significant history that commands close attention rather than willful amnesia or spurious denials. For probing this covert confluence between CIA research and cognitive science reveals not only the discovery of a virulent form of psychological torture that had persisted to the present but also the development of its antidote in the form of modern medical ethics.

#### DISCOVERY

At the dawn of the Cold War, the human mind became a covert battleground for deployment of new weapons for mass persuasion and individual interrogation. From 1950 to 1962, the CIA led a massive, secret research effort to crack the code of human consciousness, a veritable Manhattan Project of the mind with costs for psychological research and operations that reached, at peak, a billion dollars a year (Simpson, 1994, p. 9).

In 1950, after just a few months of this investigation, the CIA decided to “transfer the psychological part of the [research] program to an outside agency, where more adequate facilities . . . and volunteers could be utilized as subjects.” One of the first of these new contracts was for \$300,000, through the Navy, to a “Department of Psychology” at an unnamed university. Within 2 years, the Office of Naval Research (ONR), with an unknown portion of its grants from the CIA, would become an influential patron for experimental psychology by funding 117 contracts at 58 universities (CIA, 1 May 1952; Page, 1954, pp. 621–622). More broadly, as Christopher Simpson explains, “The Department of Defense and the Central Intelligence Agency helped bankroll substantially all of the post–World War II generation’s research into techniques of persuasion, opinion measurement, [and] interrogation” (Simpson, 1994, pp. 4, 25–30, 127–132).

In understanding this Cold War mobilization of behavioral science, Lifton’s study of the Nazi doctors offers a useful analogue. Soon after taking power, Nazi appeals to the medical profession’s ingrained conservatism persuaded 45%, led by a few prominent physicians, to join the party; a smaller number, about 350 doctors, later participated in “medical crimes” through a process of psychological “numbing” and “doubling.” Just as Lifton asked how these German doctors could betray their Hippocratic Oath, so we might ask how American psychologists dedicated to healing pain might instead choose to inflict it through medical experiments or interrogation (Lifton, 1986, pp. 4, 16–17, 34–35, 37–39, 42–44, 269–278, 418–429).

But the Nazi role in the CIA’s research was more than mere metaphor or analogue. Just as the U.S. space program later benefited from the work of Werner von Braun’s rocket scientists at Peenemuende and the Luftwaffe’s medical experiments at Dachau, so this CIA psychological effort continued the research of the Nazi doctors, both their specific scientific findings and innovative use of human subjects. In 1942, the Luftwaffe had done pioneering research into altitude sickness and hypothermia on some 200 prisoners at the Dachau death camp, documenting their agonizing deaths in graphic films shown at the 1942 Nazi aviation medical conference. After the war, the U.S. Air Force, enticed by the scientific significance of this work, recruited 34 of these Nazi doctors who had eluded Nuremberg’s net to establish a new School of Aviation Medicine at Randolph Field, Texas—bringing the Reich’s scientific *esprit* into the heart of U.S. military medicine (Bower, 1987, pp. 3, 214–232; Coste, 2007, pp. 60–65). In 1950 the U.S. Air Force effectively expunged these crimes from the historical record by publishing *German Aviation Medicine: World War II*, a hagiographic account of these Nazi doctors as heroic men who “showed great scientific understanding . . . and personal concern in aeromedical research” (Hunt, 1991, pp. 89–93, 287).

More broadly, the Nazis’ use of human subjects, which shattered long-standing clinical restraints, had contradictory effects—cautioning medical science about the need for ethics embodied in the 1947 Nuremberg Code, while simultaneously alerting the U.S. intelligence community to the yield from inhumane treatment (Taylor, 1992, pp. 71–75, 77–78; Perley, 1992, pp. 149–168). “The Nuremberg Code has remained official American policy ever since 1946,” wrote John Marks in his landmark study of CIA mind-control research, “but, even before the verdicts were in, special U.S. investigating teams were sifting through the experimental records at Dachau for information of military value” (Marks, 1979, p. 9–11). In sum, medical science was repulsed by Dachau’s inhumanity, but U.S. intelligence was intrigued.

Consequently, Washington’s postwar defense research was soon infected by the Dachau model, whose methods it mimed across a broad spectrum of Cold War experiments on, literally, tens of thousands of unwitting human subjects—from atomic, chemical, and biological warfare to psychological torture (Moreno, 2000, pp. 119–155, 189–297; Goliszek, 2003, pp. 117–180; Welsome, 1999, pp. 189–236, 255–382; “Hidden,” 2006). Reflecting this era’s

ethical ethos, all the behavioral researchers cited in this paper with ties to secret research—Baldwin, Beecher, Hebb, Milgram, Wexler, Mendelson, Leiderman, and Solomon—conducted experiments whose success entailed infliction of psychological pain on human subjects in violation of the Nuremberg Code.

In contrast to command-economy models for scientific mobilization in the Soviet Union or the Third Reich, the CIA employed financial incentives and collegial manipulation to effect a subtle redirection of the cognitive science community, making its mind-control effort a dominant research objective during this troubled decade. Apart from a few lead researchers who were knowing collaborators, most of those implicated—their colleagues, junior faculty, and graduate assistants—were likely unaware of the covert agenda, and often pursued research remote from the Agency's goals. Nonetheless, the CIA presided over an efficient scientific effort that made important gains—elimination of exotic methods such as hypnosis and LSD, and, above all, discovery of innovative behavioral techniques. Although the Agency's drug testing led nowhere except to endless lawsuits by its Canadian victims, obscure CIA-funded behavioral experiments, outsourced to leading American and Canadian universities, soon made key contributions to the development of psychological torture ("Les victimes," 2007; "Montreal Woman," 2007).

#### OUR MAN IN MONTREAL

In March 1951, the CIA initiated a "top secret" research program into "all aspects of special interrogation" through "exchange of information and coordination of related programs" (CIA, 19 March 1951). Consequently, in the words of a later Canadian inquiry by George Cooper, QC, "a high-level meeting took place at the Ritz Carlton Hotel in Montreal on June 1, 1951." Attending were Sir Henry T. Tizard, the venerable senior scientist from the U.K. Ministry of Defense; Dr. Omond Solandt, head of Canada's Defense Research Board (DRB); Dr. Donald O. Hebb, head of the Board's Behavioral Research and chair of Psychology at McGill; and two Americans, Dr. Caryl Haskins and Commander R.J. Williams. These latter two were identified, in a "handwritten note" found in Board files, as "CIA" (Cooper, 1986, pp. 32–33, Appendix 21).

As noted in the Board's minutes of the Montreal meeting, "Dr. Hebb suggested that an approach based upon the situation of sensory isolation might lead to some clues" to answering "the central problem" that interested this covert research coalition: that is, " 'confession,' 'menticide,' 'intervention in the individual mind,'—together with methods concerned in psychological coercion." Speaking at length, Hebb suggested that by "cutting off all sensory stimulation . . . , the individual could be led into a situation whereby ideas, etc. might be implanted." In response, Sir Henry concurred, stating that these issues "had become a matter of concern in the U.K.," and adding that "the methods of psychological coercion . . . had been well developed by the [Medieval] inquisition" (Cooper, 1986, Appendix 21).

As consensus formed about "research methods and design," the group adopted Hebb's suggestion that "experimental isolation in various forms for the production of *sensory isolation*" might place subjects "in such a position psychologically that they would be susceptible to implantation of new or different ideas." Despite the Board's later claims to the contrary, its minutes indicate clearly that their priority in backing Hebb's brainwashing work was not defensive but *offensive* operations against communist enemies. "With respect to . . . useful results," the Montreal principals agreed, "present methods of offence had moved over into the psychological field and that the whole area of change in public opinion and individual attitude was assuming rapidly increasing importance" (Cooper, 1986, Appendix 21).

The CIA's own minutes concur, recording that the Montreal group agreed there was "no conclusive evidence" that the Soviets had made anything akin to "revolutionary progress," and dismissed their interrogation as "remarkably similar . . . to the age-old methods." Behind closed doors, therefore, the defensive pretence evaporated, and these cold warriors decided to pursue control over human consciousness for offensive "cold war operations": that is, ideological conversion and coerced interrogation (Cooper, 1986, pp. 31–32; Marks, 1979, pp. 29–31; CIA, 6 June 1951 and 9 July 1951).

Within just a few years, this allied scientific offensive would include: a British "intelligence research unit" at Maresfield, Sussex; an Anglo-American facility near Frankfurt for lethal experiments on captured Soviet-bloc "expendables"; CIA-funded psychology research at leading U.S. universities; periodic allied conferences to exchange results; and above all, classified Canadian studies of sensory deprivation at McGill University (Weinstein, 1990, p. 274; Meek, 2005; Marks, 1979, pp. 32–33; Ignatieff, 1 April 2001). In marked contrast to the poor yield from the CIA's drug experiments, three behavioral projects, among the hundreds outsourced to academics, produced important results.

Three months after the Montreal meeting, in one of the most significant steps for gestation of the CIA's psychological paradigm, Ottawa's Defense Research Board (DRB) awarded Dr. Hebb a "secret" grant, under Contract DRB-X38 from 1951 to 1955, for experiments that discovered the devastating psychological impact of sensory isolation. As Hebb explained in his classified 1952 report, this experiment was measuring "whether *slight* changes of attitude might be effected" by shorter periods of isolation intensified by "wearing (a) light-diffusing goggles, (b) earphones through which white noise may be constantly delivered . . . , and (c) cardboard tubes over his [the subject's] forearms so that his hands . . . cannot be used for tactual perception of the environment." In contrast to the modest impact anticipated, Hebb reported that "motivational disturbance appears great," and among twenty-two subjects "four remarked spontaneously that being in the apparatus was a form of torture." Evidently encouraged, Hebb concluded, "the contract is opening up a field of study that is of both theoretical and practical significance" (Hebb, Heron, & Bexton, 1952, Appendix 22).

With a growing sense of his project's scientific import, Hebb—aware of competition from his colleague Dr. Ewan Cameron who, he said, "is now undertaking some work with this method"—pressed the DRB for permission to publicize his results. But the Board resisted by insisting on secrecy and, if necessary, deceptive cover stories (Morton, 1 January 1953; Hebb, 15 December 1952). Although public disclosures were restricted, Hebb's 1952 annual report was distributed to all three branches of the U.S. military along with "1 copy to Central Intelligence Agency (USA)" (Hoyt, 7 May 1956).

After three years of secret research, the story finally leaked to the *Toronto Star* in January 1954. In a background memo for the minister, the DRB's Dr. Solandt explained that Hebb's research had "originated from a discussion among Sir Henry Tizard, representatives of the US Central Intelligence Agency, Dr. Hebb . . . , and myself in June 1951." Hebb's subsequent research has "given some indication that significant changes in attitude can be brought about by use of propaganda under conditions of isolation." With a misleading cover story that the project was preventing monotony by those monitoring a radar display, the DRB soon silenced the press (Hebb, 11 January 1954; Solandt, 25 January 1954).

Even so, after questions were raised in the Canadian Parliament, the Cabinet decided on "questions of principle," that "the contract with Hebb at McGill be cancelled." In an internal memo to Solandt, a Defense official noted that "there continues to be interest from U.S. in this project, . . . Hebb has previously had several official US visitations" (Blakely, 1956; Watters, 26 July 1954; Memorandum to OMS 17/9, 1954). In a report for Cabinet, Dr. Solandt,

hinting at continuing CIA contacts, noted Hebb's work has been of "appreciable interest to U.S. research agencies, representatives of which have by arrangement visited Hebb" (Solandt, 3 August 1954).

However, while Canada was cutting Hebb loose, the CIA continued regular contacts. In September 1954, as more than 6,000 psychologists filled New York City's Statler Hotel for the APA convention, a CIA scientist met Hebb's close colleague, Dr. Edward C. Webster, later chair of Psychology at McGill, for a detailed briefing on the sensory deprivation experiment (CIA, 30 September 1954; Sanford, 1954, p. 708; Hebb, 1955). At some point as well, according Hebb's colleague Dr. Peter M. Milner, "The project . . . did receive money from a research foundation that was later revealed to be a front for the C.I.A." (Milner, 10 November 1992).

Two years later, the director of the U.S. National Institutes of Health, Dr. Robert H. Felix, demolished the project's careful cover when he told the U.S. Congress about a study by "Dr. Donald Hebb" using sixty students "who stayed as long as they could on a bed in an air conditioned box." Asked if "this is a form of brainwashing," Dr. Felix replied: "You can break down anyone with this, I don't care what their background." After coverage in the *New York Times* of 15 April 1956 prompted "Brainwashing" headlines in the Montreal *Gazette*, Dr. Hebb insisted, inaccurately, on the "defensive" nature of his research: "We were not trying to find bigger and better ways of torturing others, but to find out how to protect our own men" ("Tank test," 1956, p. 18; Cahill, 17 April 1956; "Brainwashing," 26 April 1956, p. 1).

In a parallel press release, the DRB insisted that "the scientists . . . were extremely careful to limit the research techniques so that there was no possibility of damage to the subjects who volunteered" (Field, n.d., Appendix 23). There are, however, grounds for a contrary view. An experiment that discovered the driver in CIA psychological torture may well have subjected students to this same torture—a complaint, in fact, made by four of Hebb's original volunteers. So extreme was this sensory deprivation that Hebb's subjects had unanticipated hallucinations akin to mescaline. In his 1992 epic poem, "Listening to the Candle," one of these student subjects, Professor Peter Dale Scott, described how he, not Hebb, first noticed the vivid hallucinations and, in a follow-up interview, recalled the researchers' initial incredulity at his report (Scott, 1992, pp. 6–7; Scott 2006).

yet the very aimlessness  
preconditioning my mind . . .  
for blank lucrative hours  
of sensory deprivation  
as a paid volunteer  
in the McGill experiment . . .  
my ears sore from their earphones'  
amniotic hum my eyes  
under two bulging halves of pingpong balls  
*arms covered to the tips with cardboard tubes*  
those familiar hallucinations  
I was the first to report  
as for example the string  
of cut-out paper men  
emerging from a manhole  
in the side of a snow-white hill  
distinctly two-dimensional

Many of Hebb's subjects were McGill medical students, and through phone interviews, I have learned that one subject suffered a complete breakdown and, without any treatment

from McGill, had still not recovered 4 years later when they lost touch (personal communication, 13 March 2006). Although repeating the DRB's claim that Hebb had "the highest regard for the welfare of the volunteer students," Cooper's inquiry did note "an unconfirmed report that one student developed a form of mental illness following the experiment." But he dismissed the matter after hearing an unsubstantiated "suggestion . . . that the illness was incipient in any event, and would have resulted regardless of Dr. Hebb's experiments" (Cooper, 1986, pp. 35–36).

By contrast, Hebb himself admitted that he did not screen his subjects for instability and was not prepared for the extreme hallucinations. "For subjects," he recalled in a memoir written before his death in 1985, "we simply called the employment office at McGill and hired the student they sent us. Presently we found that . . . the subjects, some of them, were seeing things in the experimental conditions, and feeling things. One felt his head was disconnected from his body, another had two bodies." Hebb was also shocked at the devastating impact of his experiments: "It scared the hell out of us to see how completely dependent the mind is on a close connection with the ordinary sensory environment, and how disorganizing to be cut off from that support" (Hebb, ca. 1980).

Significantly, several follow-up experiments inflicted similarly dangerous trauma on their human subjects. In 1955, one of Hebb's former students now at the National Institute of Mental Health, Dr. Maitland Baldwin, confined an Army volunteer inside a Hebbian sensory deprivation box. After forty hours, the subject began "an hour of crying loudly and sobbing in a most heartrending fashion" before kicking his way out. At the prompting of Morse Allen, chief of the CIA's Artichoke Project, Dr. Baldwin agreed to push the experiment further into "terminal type" tests if the Agency would provide expendable human subjects—a proposal that a CIA medical officer rejected as "immoral and inhuman" (Marks, 1979, pp. 23–25, 32–33, 106, 137–138, 201–202; Brown, 2007, p. 209). Similarly, in 1957 a team of Harvard psychiatrists, funded by the ONR, confined seventeen paid volunteers "in a tank-type respirator" arranged "to inhibit movement and tactile contact." After seventeen hours, one subject, a 25-year-old dental student, "began to punch and shake the respirator," his "eyes full of tears, and his voice shaking." Four volunteers terminated from "anxiety and panic," and all suffered "degrees of anxiety" (Wexler et al., 1958, pp. 225–233). We have no way of knowing whether such trauma did lasting damage, for none of these researchers—Hebb, Baldwin, or the Harvard psychiatrists—reported any follow-up treatment.

The implications of Hebb's experiment for both cognitive science and CIA interrogation were profound. As Hebb himself later said, "the experiment did give support for my theory of behavior" first propounded, without experimental confirmation, in his landmark 1949 book, *The Organization of Behaviour*, and got him "recognized abroad" (Hebb, 1949; Hebb, ca. 1980). Within seven years of his team's first publications, over 230 articles on sensory deprivation appeared in leading scientific journals, citing Hebb's work and contributing to his rising reputation (Soloman et al., 1961, pp. 239–257; Glickman, 2000, pp. 105–106; Hebb, 1980, pp. 96–97).

In 1958, an active CIA contractor, Dr. Lawrence Hinkle of Cornell, conducted a comprehensive review of "interrogation . . . for the purposes of intelligence," finding Hebb's isolation "the ideal way of 'breaking down' a prisoner, because . . . it seems to create precisely the state that the interrogator desires: malleability and the desire to talk, with the added advantage that one can delude himself that he is using no force or coercion" (Hinkle, n.d., pp. 1, 5, 6, 11–14, 18). Moreover, in 1963, when synthesizing this decade of mind-control research in its "Kubark Counter Intelligence Interrogation" manual, the CIA, citing "experiments conducted at McGill University," explained that sensory deprivation was effective because "the

calculated provision of stimuli during interrogation tends to make the regressed subject view the interrogator as a father-figure . . . strengthening . . . the subject's tendencies toward compliance" (KUBARK, 1963, pp. 87–90).

#### CIA AND CANADA

Controversy over McGill's research flared anew in the mid-1980s when nine victims of Dr. Ewan Cameron's CIA-funded research at the university's Allen Memorial Institute sued the Agency in Washington, DC, sparking important revelations. With CIA funding from 1957 to 1963, Dr. Cameron had used approximately a hundred patients as involuntary subjects to test a three-stage method for "brain washing" or "depatterning"—first, a drug-induced coma, spiked with LSD for up to eighty-six days; next, extreme electro-shock treatment three times daily for thirty days; and, finally, a football helmet clamped to the head with a looped tape repeating, up to a half-million times, messages such as "my mother hates me" (Nickson, 1994, pp. 48–52; Weinstein, 1990, pp. 110–120, 140–141; Thomas, 1988, pp. 114, 166–170, 176–177; Marks, 1979, pp. 132–141; Cameron, 1962, pp. 65–76).

Despite the horrific abuse, the Canadian establishment closed ranks behind Washington—with Cooper's report dismissing the CIA's role as a "side issue" or "red herring"; medical deans finding Cameron's research ethical by the standards of the day; Ottawa's Justice Department denying legal responsibility; the Canadian Psychiatric Association refusing, unlike its American counterpart, any apology; and Prime Minister Brian Mulroney's government offering each victim a nugatory \$20,000 "nuisance" payment (Cooper, 1986, pp. 2–5, 41–44, 85–86, 96, 103–112, 117–122, 125–127; Vienneau, 16 April 1986; Rauh & Turner, 1990, pp. 316, 325–330, 352–354; Weinstein, 1990, pp. 278–281).

Throughout the litigation, Dr. Solandt, former head of the DRB, spoke frankly about Ottawa's close cooperation with the CIA during the Cold War. "During the 1950's," Solandt stated in a sworn affidavit, "the United States Central Intelligence Agency had a resident representative at the United States Embassy in Ottawa who was publicly introduced as such . . . and was free to attend Defense Research Board . . . meetings where defence research programs were discussed" (Rauh & Turner, 1990, p. 335). In an interview with *The Toronto Star*, Solandt revealed his Board's secret protocol with the CIA: "If they wanted classified research they came to the board and if we thought it was suitable we paid for it and then passed it on to the U.S." (Vienneau, 14 April 1986). After similar communications with Solandt, Cooper reported this protocol let Canadian researchers like Hebb work for the CIA or Pentagon without being paid by Washington. In lieu of direct payments, there was a "rough *quid pro quo* in that, when Canada requested the U.S. to do certain work in exchange, the work would be done south of the border." In defense of Ottawa's "open policy with the CIA," Dr. Solandt told the press that "we got five times the information from them that they received from us" (Cooper, 1986, pp. 97–99; Vienneau, 14 April 1986).

Despite denials by McGill colleagues that Hebb had any U.S. contacts, this litigation documented his close, continuing relationship with the CIA (Vienneau, 17 April 1986; Milner, 1992). According to the plaintiff's attorney Joseph L. Rauh, Jr., in pretrial discovery "the CIA formally admitted in court papers . . . its close ties with Dr. Hebb"—specifically, that Hebb received an Agency briefing in 1963 and was issued "a special CIA security clearance" on 10 April 1964—a decade after Canada had terminated its participation in the joint mind-control project (Rauh & Turner, 1990, pp. 335, 336–337; Vienneau, 16 April 1986).

Significantly, Ottawa's denials only ended when the Agency, after 8 years of litigation, finally admitted its culpability. As Prime Minister Mulroney's conservative government



became “an active and hostile opponent” of this suit by its own citizens, Rauh, a Washington insider, noted with growing dismay that its nominally “independent study” was chaired by George Cooper, “a former M.P. who maintained close ties with the Tory machine.” His staffers took key assessments “from the lips of the CIA’s lawyers,” and their 1986 report was “a complete whitewash” (Rauh & Turner, 1990, pp. 307, 352–353). Lending credence to this critique, Cooper described Dr. Cameron as “a good man . . . trying to do the best he could for his patients” and even speculated that he “did not know of CIA involvement” in his funding (Cooper, 1986, pp. 70, 96, 104–112).

Ironically, Cooper’s exculpation of the CIA was rendered risible just two years later in 1988 when the Agency itself paid the Canadian victims \$750,000, the maximum allowable under U.S. law. After evaluating the evidence, CIA director William Webster ordered the settlement, saying: “Sometimes you see the right thing to do, and you do it” (Rauh & Turner, 1990, pp. 360–362). As for Dr. Cameron’s treatment of his patients, the eminent psychiatrist Robert Lifton stated, in an affidavit for the plaintiffs, that his depatterning experiments had “deviated from standard and customary psychiatric therapies in use during the 1950s”; and instead “represent a mechanized extension of . . . ‘brainwashing’ methods” (Rauh & Turner, 1990, pp. 333, 336). As for Cooper’s speculation about Cameron’s ignorance of the Agency’s role, other sources show the doctor was a close personal friend of spymaster Allen Dulles from their days at the Nuremberg tribunal and later, when Dulles was CIA director, met him in Washington to arrange the funding for his McGill experiments (Weinstein, 1990, pp. 92–95; Thomas, 1988, pp. 114, 166–170, 176–177). Indeed, this Nuremberg experience and his exposure to the Nazi medical experiments there might explain why Cameron later conducted his own research with a cruelty that none, including Cooper, can explain (Cooper, 1986, pp. 110–111).

As Lifton reminds us in his study of the Nazi doctors, we must explore these ethical compromises as the response of a larger professional cohort to state pressures. Indeed, other leading scientists contributed to the CIA’s evolving psychological paradigm—notably, Cornell neurologists Lawrence Hinkle and Harold Wolff who, while working under a CIA contract to test “useful secret drugs (and various brain damaging procedures),” identified self-inflicted pain as the most effective Soviet interrogation technique (Marks, 1979, pp. 147–163; Weinstein, 1990, pp. 133–135; Thomas, 1988, p. 168; Hinkle & Wolff, 1956, pp. 116–117, 128–130, 134–135).

In retrospect, Stanley Milgram seems like an example of a junior researcher whose work was incorporated into this larger project. At key points in his career, Milgram benefited from patronage of behavioral scientists connected to the national security apparatus. After a review of his proposal for his obedience experiments by the head of Group Psychology at ONR, a key CIA conduit for covert funding, the National Science Foundation (NSF) gave Milgram a \$24,700 grant—a substantial award when compared to Hebb’s \$40,000 over four years and Cameron’s \$64,000 over seven years. In later years, as the field shed the CIA’s once pervasive influence, Milgram never received another NSF grant—even though he proposed a project that, *pace* Blass, made similar use of a mechanical device to test human behavior (Blass, 2004, pp. 65–72, 235–242; Vienneau, 16 April 1986).

Like others linked to this mind-control project, Milgram showed an apparent disregard for his subjects. After recruiting participants without serious screening by innocuous advertisements in the local newspaper, he then manipulated them, through deceptive instructions, to participate in apparent torture. With the exception of some exit interviews for the camera, he then dismissed his subjects without significant counseling, bearing the unsettling knowledge that they were, like the Gestapo, moral monsters who could inflict calibrated cruelty

upon fellow humans. Indeed, as Blass tells us in his biography, one subject, a military veteran named William Menold, recalled feeling “an emotional wreck,” a “basket case,” from the realization “that somebody could get me to do that stuff.” Privately, Milgram himself viewed the experiment as “ethically questionable” because “it is not nice to lure people into the laboratory and snare them into a situation that is stressful and unpleasant to them” (Milgram, 1974, pp. 1–43; Blass, 2004, pp. 76, 114–116; Milgram, 1964, pp. 137–143). In this sense, Milgram clearly violated the first principle of the 1947 Nuremberg Code requiring subjects should “be able to exercise free power of choice, without . . . force, fraud, deceit” (Annas & Grodin, 1992, p. 2).

Although Hebb was a great scientist whose work had lasting import far beyond the CIA’s agenda, Milgram was a technician whose finding, anyone can torture, was more appropriate for historical research. Milgram’s research was driven, as a close colleague explained, “by deep personal concerns about how readily the Nazis had killed Jews during the Holocaust” (Zimbardo, 2007, p. 42). But Milgram’s torture experiments do not address this historical problem as directly or, arguably, as effectively as Christopher Browning did in his more relevant and revealing archival study, *Ordinary Men* (Browning, 1998, pp. 159–189; Miller, 1986, pp. 179–220). In this sense, Milgram failed to abide by article two of the Nuremberg Code: “The experiment should be such as to yield fruitful results for the good of society, unprocurable by other methods or means of study” (Annas & Grodin, 1992, p. 2).

Yet Milgram was a skilled publicist, filming the experiment for a documentary whose allure soon expunged the ethical reservations of his contemporaries. Whatever his motivations, which may have been admirable, Milgram also provided the intelligence community, in this Cold War context, with useful information as it began global propagation of its new psychological torture paradigm—that is, anyone could be trained to torture (Milgram, 1964, pp. 137–143). In retrospect, Milgram’s work might be best studied as a Faustian quest for knowledge that led, during a dark decade in the history of behavioral science, to ethical compromises in the treatment of human subjects.

#### THE NAZI DOCTOR’S APPRENTICE

In September 1951, just three months after the CIA’s secret Montreal meeting, Dr. Henry K. Beecher, the Dorr Professor of Anesthesiology at Harvard University, crossed the Atlantic in a determined search for drugs that would prize open the human mind for interrogation. At home and abroad for over a decade, Beecher pursued this secret military research, testing powerful psychotropic drugs, mescaline and LSD, on unwitting human subjects, and thus drinking deep from Dachau’s poisoned well.

Our earliest indication of Beecher’s interest in interrogation is a letter, dated February 7, 1947, from Dr. Arthur R. Turner, chief of the U.S. Army’s Medical Intelligence Branch, reading: “Inclosed for your retention is a brochure, dealing with the Dachau Concentration Camp, which has just arrived. I . . . thought it might be of interest to you.” This brochure, by the German aviation medical research unit, detailed 30 mescaline experiments on Dachau inmates by SS-Hauptsturmführer Dr. Kurt Ploetner aimed “to eliminate the will of the person examined . . . by the Gestapo.” In words that promised to unlock the mind for interrogation, the report concluded: “If the Messkalin had an effect on the mental state of the P.E.’s, the examining person succeeded in every case in drawing even the most intimate secrets from the P.E. when the questions were cleverly put” (Harvard Medical, October 1945; Turner, 7 February 1947).

In an apparent effort to encourage Beecher’s research in this area, the U.S. Army’s surgeon general sent him other reports on the Mauthausen Concentration Camp and LSD

research at the Swiss Sandoz Company (Turner, 24 March 1947; Beecher, 29 August 1950). To assist the Army's search for drugs that might serve as "truth sera" in interrogation, Beecher reported, in June 1950, that he had consulted colleagues about the "considerable problem here in the use of healthy young volunteers" to test "synthetic agents in the mescaline group" before finding, at Massachusetts General Hospital, "we have an almost ideal set-up here in Boston for study of this problem" (Beecher, 15 June 1950).

Although we cannot be certain that SS-Hauptsturmführer Ploetner's report inspired his quest, in September 1951 Dr. Beecher criss-crossed Europe for research "on the subject of the 'ego-depressant' drugs, usually called truth serum in the newspapers," paying particular attention to the Gestapo's drug of choice, mescaline (Beecher, 21 October 1951). Reflecting the Anglo-American cooperation forged at Montreal, at his first stop, England, Beecher had access to dozens of top scientists. At the Ministry of Defense, Dr. B. A. R. Gater gave him a "bibliography on several drugs considered as promising," with eight citations for mescaline and fourteen for LSD. In Stratford-upon-Avon, Sir Frederick Bartlett, professor of experimental psychology at Cambridge, agreed "that data are probably more readily obtainable with drugs than without and hence of special value if many men are to be interrogated." By stages, however, Dr. Beecher's hunt for appropriate collaborators led him full circle back to the Nazi war criminals he had encountered in reading Dr. Ploetner's report on Gestapo drug tests at Dachau (Beecher, 21 October 1951).

Moving on to the Allied Headquarters (SHAPE) at Marley-le Roi, Beecher learned, in discussions with U.S. officers, he could best expand his secret drug research by going beyond the medical corps to military intelligence since "the Central Intelligence Agency has representatives . . . on the Joint Intelligence Committee" (Beecher, 21 October 1951). Indeed, at Heidelberg, Dr. Beecher was sharply reminded of the immorality of his research, from a medical perspective, when the Chief U.S. Surgeon for Europe, General Guy B. Denit, advised him "that as a physician under the Geneva Convention he [Denit] could have nothing officially to do with the use of drugs for the purposes in mind and turned me over to G-II." Consequently, U.S. Army G-II, or Military Intelligence, transferred Dr. Beecher from the moral realm of military medicine to "Oberursel, to the European Command Interrogation Center," the dark center of the Allied interrogation effort (Beecher, 21 October 1951).

Outside Frankfurt, site of the CIA's German headquarters, the rolling Taunus Hills concealed two of the most secret U.S. intelligence facilities. Once site of the Luftwaffe's famed "Durchgangslage Luft" interrogation center, Oberursel had become Camp King, the home of the European Command Interrogation Center where, after 1948, a staff of ex-Gestapo soldiers and former Nazi doctors, including the notorious deputy Reich health leader Kurt Blome, were employed in inhumane interrogations of Soviet defectors and double agents. Nearby in the town of Kronberg, the CIA used Haus Waldhof, a former country estate, as a safe house for drug testing, brutal torture, and lethal experiments on Soviet bloc expendables. In 1952, for example, the CIA's Morse Allen—assisted by Dr. Samuel V. Thompson, a Navy Psychiatrist, and Professor G. Richard Wendt, a University of Rochester psychologist—would use the site to test dangerous combinations of drugs such as Benzedrin and Pentothal-Natrium on Russian captives, under the protocol that "disposal of the body is not a problem" (Silver, 1993, pp. 199–213; Pruitt, 18 January 1993, pp. 18–19; Koch and Wech, 2003, pp. 50, 89–121, 269; Bower, 1987, pp. 254–256).

At Oberursel, Dr. Beecher discussed possible drug uses for interrogation with six staffers including a Major Hart, head of a "brutal interrogation team" known as the "rough boys," and Captain Malcolm Hilty, chief interrogator. All agreed: "It would be desirable for me to return,

perhaps in a year, when we know better the signs and symptoms of the newer derivatives of mescaline and lysergic acid [LSD], to interrogate especially high level escapees from Russian interrogation." In the interim, they recommended he work with a Dr. Schreiber, Camp King's former staff doctor, whom Beecher described as "a physician and former German general who is now on his way to the States, will be at the School of Aviation Medicine . . . Schreiber is intelligent and helpful" (Beecher, 21 October 1951; Koch & Wech, 2003, pp. 102–103).

Who was Dr. Schreiber, this ideal partner for Professor Beecher's secret drug research? He was, in fact, General Walter Schreiber, former medical chief for the Wehrmacht who had presided over "concentration camp . . . experiments on inmates that usually resulted in a slow and agonizing death." After Camp King commended his "high efficiency," the Pentagon sent him to Texas, where he joined other Nazi doctors at the School of Aviation Medicine, albeit only until May 1952 when complaints about war crimes forced his departure for Argentina (Bower, 1987, pp. 255–258; Koch and Wech, 2003, p. 94; "Nuremberg," 28 August 1946; "German," 27 October 1948; "Accused," 13 February 1952).

Moving on to Berlin, Dr. Beecher met with a Military Intelligence officer and "Mr. Peter Sichel, C.I.A." to discuss acquisition of human subjects for his plans "to interrogate as many high-level escapees as possible as to the presence of significant signs and symptoms [of drugs] during periods of interrogation." When Dr. Beecher's report on his voyage into this intelligence netherworld reached the Pentagon in October 1951, it was, at his recommendation, stamped "TOP SECRET" and not declassified until 1977, only months after his death (Beecher, 21 October 1951).

A year later in August 1952, Dr. Beecher, discarding Dr. Ploetner's preference for mescaline, returned to Europe where he now focused solely, almost obsessively, on the threat and promise of LSD 25. In the year between his visits, Beecher had joined the U.S. intelligence community's interrogation project with a "top secret" security clearance and a Pentagon grant to study the "Response of Normal Men to Lysergic Acid Derivatives" (Lund, 26 May 1951; Project Title, 31 December 1954). Just as Dr. Ploetner's results had once heralded the promise of mescaline, so the Sandoz report, provided earlier by the Pentagon, hinted that this new drug might open the human mind for interrogation: "LSD 25 can bring thoughts from the subconscious into the conscious, can increase associative activity and, by removing inhibitions, can also improve the ekphoric ability." But Sandoz had also warned that the new drug produced "a peculiar personality disturbance similar to 'split personality,'" and induced a "tendency to pathological reactions (hysterical attacks, trances, epileptic fits)" (Rothlin, n.d.). Evidently intrigued, Beecher wrote the company's chief pharmacologist in Basel, Dr. Ernst Rothlin, to arrange a meeting, explaining that "we have been doing some work in man with . . . LSD 25, which was kindly furnished us by your company" (Beecher, 4 August 1952; Beecher, 29 August 1950).

Consequently, Dr. Beecher returned from Europe warning about LSD's effect of "severe imbalance, hysteria" on, say, "a battleship's crew." In a secret report to the U.S. Army's surgeon general, he advised this drug should be studied "(1) as aids to obtain suppressed information . . . (2) as threats to security when used by an enemy agent . . . (3) as tools of biological warfare." The latter was particularly important because "the water supply of a large city could probably be disastrously and undetectably (until too late) contaminated." Determined that "the United States . . . not get behind in this field for want of an organized plan of attack," he now planned to intensify dosage in his Boston LSD experiments, saying: "We need to know the effects of larger doses, of prolonged administration of small doses and so on." Fortunately for Beecher's plans, a professor he had met in Europe "has promised to

send me for study the new L.A.E. (a mono ethyl amide of lysergic acid). This is said to be more excitant to normal individuals than is L.S.D. 25" (Beecher, 4 September 1952).

Over the next two years, Dr. Beecher carried out these LSD tests using the unwitting human subjects he now believed, through his conventional work, essential to serious pharmacological research—creating, for Beecher, a productive confluence of his covert and conventional work (Beecher, 13 February 1953). In his final report on these tests to Pentagon, Beecher noted that after administering LSD doses—"as unknowns"—four among the nine subjects given the stronger LAE became "mildly hostile and paranoid; another experienced acute panic" (Project Title: Neuropsychiatry, 1954).

In his decade of secret drug testing, Dr. Beecher sacrificed his subjects to the cause of national security. During his European travels in 1951–1952, he had sought expendable subjects for secret interrogation experiments. Back home at Harvard, Beecher, though aware of the drug's painful effects from the Sandoz report, tested powerful LSD and LAE doses that inflicted the trauma of "paranoid" reaction and "acute panic" on his unknowing human subjects—a "psychosis in miniature" that, he said coolly, "offers interesting possibilities." In sum, knowing in advance the serious trauma these drugs would cause, Beecher placed his unwitting subjects at risk by giving them dangerous doses dictated by the demands of secret research—all in violation of the Nuremberg Code. Yet he also maintained a perfect cover, minimizing public knowledge of his military research by publishing a single LSD study as third author—and even that was packaged innocuously as last in a series of drug tests. Throughout, he sat on influential biomedical bodies, such as the National Research Council, setting the U.S. research agenda (Beecher, 1959, pp. 287, 309–311; Von Felsinger, Lasagna, & Beecher, 1957, pp. 1113–1119; Von Felsinger, Lasagna, & Beecher, 1956, pp. 414–428; Beecher, 31 May 1950; Beecher, 13 June 1955; Leake, 7 June 1955).

When controversy erupted over LSD tests at Harvard in the 1960s, Dr. Beecher played the stern moralist, roundly condemning one of Timothy Leary's colleagues Dr. Walter N. Pahnke, for using the drug to ease the pain of dying. "There is an abundance of evidence," intoned Dr. Beecher, condemning such experiments, "that LSD can produce, has produced, lasting, serious damage to young people" (Beecher, 1969, pp. 21–26; Lee & Shlain, 1985, pp. 74–76).

#### MODERN MEDICAL ETHICS

This past may have some lessons for the present debate over ethical standards within the APA. In one of history's supreme ironies, this secret CIA research, with its harsh treatment of human subjects, seemed to produce its own correction, making Dr. Beecher the ultimate victor in this silent, scientific competition. By the early 1960s, as the CIA finalized an interrogation paradigm based on behavioral methods, not drugs, and his defense contracts thus dwindled, Beecher seems to have been freed from conflicts that may have restrained his moral regeneration (Goliszek, 2003, pp. 179–180). In 1966, Beecher published his famous essay, "Ethics and Clinical Research" in *The New England Journal of Medicine*, citing 22 instances of medical research whose human subjects suffered "grave consequences . . . as a direct result of experiments" and warning that these practices "will do great harm to medicine unless soon corrected" (Beecher, 1966, pp. 1354–1360).

Initially controversial, Dr. Beecher's 1966 article made his name synonymous with "informed consent" and ethical treatment of human subjects—a legacy commemorated today with the annual award of the Henry K. Beecher Prize in Medical Ethics at Harvard Medical School (Countway Medical Library, 2003, para. 1). The award's 1993 recipient, Yale bioethics professor Jay Katz, praised Beecher for "the moral passion that punctuated his every word"

in that 1966 essay (Katz, 1993, pp. 31–39). Typical of this laudatory treatment, a 2001 article in the *Bulletin of the World Health Organization* describes how Beecher drew on his “deep Christian faith” to produce “the most influential single paper ever written about experimentation involving human subjects” and thereby “played a significant role” in enacting strict federal regulations (Harkness, 2001, pp. 365–366).

Apart from Beecher’s own oblique references to his lab’s ethical lapses, the literature seems ignorant of his darker side. Even aggressive exposés of government abuses have hailed him a “hero” of medical ethics, whereas investigations of the CIA drug scandal make but cursory references to his early LSD research (Harkness, 2001, p. 365; Rothman, 1991, pp. 2–3, 70–84, 251; Moreno, 2000, pp. 239–242; Marks, 1979, pp. 67n, 72n; Lee & Shlain, 1985, p. 86). Today, every academic researcher in America and Canada lives under Dr. Beecher’s long shadow, forced to submit all research to institutional review boards that would certainly ban the experiments once done by Hebb, Cameron, Milgram, and ironically, Beecher himself.

So what lesson might we draw from the career of Dr. Henry K. Beecher, other than the importance of dying before your secret reports are declassified? If members of the APA feel tainted by the work of colleagues at Guantánamo and their association’s inaction, then Dr. Beecher provides a clear path to ethical reform. Just as he transformed himself from Dachau disciple and CIA drug researcher into moral paragon by embracing ethical standards, so the APA can expunge the stigma of its association with psychological torture. By using its professional standing to endorse ethical standards for its members, and more broadly, to define “severe mental pain” in ways that restrains future abuses, the APA can readily recover its moral leadership.

More broadly, recent research reminds us that this Cold War past continues to shape our political present. Just this year, a full half-century after Hebb discovered sensory deprivation and the Cornell team documented Soviet stress positions, we have the first clinical evidence that psychological torture is just as traumatic as its physical variant. “Ill treatment during captivity, such as psychological manipulations . . . and forced stress positions,” Dr. Metin Basoglu reports in the *Archives of General Psychiatry* after interviews with 279 Bosnian victims, “does not seem to be substantially different from physical torture in terms of the severity of mental suffering . . . and their long-term psychological outcome” (Basoglu, Livanou, & Crnobaric, 2007, pp. 277–285).

In light of this troubled past, biographers and historians alike should be cautious before rushing to canonize cognitive scientists who worked during the Cold War. If we do not investigate this past and the ways that it has shaped our present, then we cannot critique and correct. Clearly, history is too important to become mere hagiography.

#### REFERENCES

- Accused Physician demands an inquiry. (1952, February 13). *New York Times*, 24.
- Annas, G. J., & Grodin, M. A. (Eds.) (1992). *The Nuremberg Code: The Nazi doctors and the Nuremberg Code: Human rights in human experimentation*. New York: Oxford University Press.
- Basoglu, M., Livanou, M., & Crnobaric, C. (2007). Torture vs. other cruel, inhuman, and degrading treatment: Is the distinction real or apparent? *Archives of General Psychiatry*, 64, 277–285.
- Beecher, H. K. (1950, May 31). Letter to Colonel William S. Stone. Box 6. Washington DC: CIA Behavior Control Experiments Collection, National Security Archive. [hereafter cited as National Security Archive].
- Beecher, H. K. (1950, June 15). Letter to Col. William S. Stone. Box 6. National Security Archive.
- Beecher, H. K. (1950, August 29). Letter to Col. William S. Stone. Box 6. National Security Archive.
- Beecher, H. K. (1951, October 21). Letter to the Surgeon General, Box 16, RG 319, NARA. (Copy from Egmont Koch, author of *Deckname Artischocke*).
- Beecher, H. K. (1952, August 4). Letter to Dr. E. Rothlin. Box 6. National Security Archive.
- Beecher, H. K. (1952, August 15). Experimental pharmacology and measurement of the subjective response. *Science*, 116, 157–162.

- Beecher, H. K. (1952, September 4). Consultant, subject: information from Europe related to the ego-depressants, 6 August to 29 August 1952. Box 6. National Security Archive.
- Beecher, H. K. (1953, February 13) Letter to Science. *Science* 117, 166–167.
- Beecher, H. K. (1955, June 13). Letter to Chauncey D. Leake. Box 6. National Security Archive.
- Beecher, H. K. (1959). *Measurement of subjective responses: Quantitative effects of drugs*. New York: Oxford University Press.
- Beecher, H. K. (1966). Ethics and clinical research. *The New England Journal of Medicine*, 274, 1354–1360.
- Beecher, H. K. (1969). Response to the Ingersoll Lecture by a physician. *The Harvard Theological Review*, 62, 21–26.
- Blakely, A. (1956, April 25). Life in a cubicle I. *The Gazette* (Montreal), 6.
- Blass, T. (2004). *The man who shocked the world: The life and legacy of Stanley Milgram*. New York: Basic Books.
- Blass, T. (2007). Unsupported allegations about a link between Milgram and the CIA: Tortured reasoning in a question of torture. *Journal of the History of the Behavioral Sciences*, 43, 199–203.
- Bower, T. (1987). *The paperclip conspiracy: The hunt for Nazi scientists*. Boston: Little, Brown.
- Brainwashing Defense Found: McGill Explains Experiments. (1956, April 26). *The Gazette* (Montreal), p. 1.
- Browning, C. R. (1998). *Ordinary men: Reserve police battalion 101 and the final solution in Poland*. New York: HarperCollins.
- Brown, R. E., & Milner, P. M. (2003). The legacy of Donald O. Hebb: More than the Hebb synapse. *Nature Reviews/Neuroscience*, 4, 1013–1019.
- Brown, R. E. (2007). Alfred McCoy, Hebb, the CIA and torture. *Journal of the History of the Behavioral Sciences*, 43, 205–213.
- Cahill, B. (1956, April 17). “Isolation” tests at McGill hold brain-washing clues. *The Gazette* (Montreal).
- Cameron, D. E., et al. (1962). The depatterning treatment of schizophrenia. *Comprehensive Psychiatry*, 3, 65–76.
- Central Intelligence Agency [hereafter cited as CIA]. (1951, March 19). Subject: Special Interrogation Program. National Security Archive.
- CIA. (1951, June 6). Minutes of meeting. Box 5. National Security Archive.
- CIA. (1951, July 9) Memorandum for: Assistant Director, SI, Subject: Progress on BLUEBIRD. Box 5. National Security Archive.
- CIA. (1952, February 12). Proposed Study on Special Interrogation Methods. National Security Archive.
- CIA. (1952, May 1). Project NM 001 056.0. Box 8, National Security Archive.
- CIA. (1954, September 30). Office memorandum, to: Chief, Technical Branch, from: [blacked-out], Subject: National Meetings of the American Psychological Association. National Security Archive.
- Cooper, G. (1986). Opinion of George Cooper, Q.C., Regarding Canadian Government Funding of the Allan Memorial Institute in the 1950's and 1960's. Cat. No. J2-63 Ottawa: Minister of Supply and Services Canada. [hereafter cited as Opinion of George Cooper, Q.C.]
- Coste, P. (2007). Cette prison ou l’Amérique recyclait des savants Nazis. *L’Express*, 60–65.
- Countway Medical Library. (2003). Faculty and Staff—Dr. Henry Knowles Beecher, 1904–1976. Retrieved February 16, 2007, from Countway Medical Library, Archives, Harvard University: [http://www.countway.harvard.edu/archives/iotm/iotm\\_2002-01.shtml](http://www.countway.harvard.edu/archives/iotm/iotm_2002-01.shtml)
- Field, Dr. G. S. (n.d.). Statement from Acting Chairman of the Defence Research Board. Opinion of George Cooper, Q.C. (Appendix 23).
- German General Flees East Zone (1948, October 27). *New York Times*, 7.
- Glickman, S. E. (2000). Hebb, Donald Olding. In A. E. Kazdin (Ed.), *Encyclopedia of psychology*. New York: Oxford University Press.
- Goliszek, A. (2003). *In the name of science: A history of secret programs, medical research, and human experimentation*. New York: St. Martin’s Press.
- Harkness, J., Lederer, S. E., & Wikler, D. (2001). Laying ethical foundations for clinical research. *Bulletin of the World Health Organization*, 79, 365–366.
- Harvard Medical Library. (October 1945). German aviation medical research at the Dachau concentration camp. Technical Report no. 3331–45, U.S. Naval Technical Mission to Europe, H MS c64, Box 11, f.75.
- Hebb, D. O. (1949). *The Organization of Behavior: A Neuropsychological Theory*. New York: John Wiley & Sons.
- Hebb, D. O. (1952, December 15). Letter to N. W. Morton. Opinion of George Cooper, Q.C. (Appendix 23).
- Hebb, D. O. (1953, November 2). Letter to N. W. Morton. Opinion of George Cooper, Q.C. (Appendix 23).
- Hebb, D. O. (1954, January 11). Letter to N. W. Morton. Opinion of George Cooper, Q.C. (Appendix 23).
- Hebb, D. O. (1955). Drives and the C.N.S. (conceptual nervous system). *The Psychological Review*, 62, 243–254.
- Hebb, D. O. (ca. 1980). “This is how it was,” Address to Canadian Psychological Association. (From personal papers of Donald O. Hebb, kindly provided by Mary Ellen Hebb).
- Hebb, D. O. (1980). *Essay on mind*. Hillsdale, NJ: Lawrence Erlbaum.
- Hebb, D. O., Heron, W., & Bexton, W. H. (1986). Annual Report, Contract DRB-X38, Experimental studies of attitude. Opinion of George Cooper, Q.C. (Appendix 22).
- Hellman, H. (1998). *Great feuds in science: Ten of the liveliest disputes ever*. New York: John Wiley & Sons.
- Hidden history of US germ testing. (2006, February 13). BBC Radio 4. Retrieved June 4, 2007, from [http://news.bbc.co.uk/2/hi/programmes/file\\_on\\_4/4701196.stm](http://news.bbc.co.uk/2/hi/programmes/file_on_4/4701196.stm)
- Hinkle, Jr., L. E. (n.d., ca. 1958). A consideration of the circumstances under which men may be interrogated, and the effects that these may have upon the function of the brain. File: Hinkle, Box 7. National Security Archive.

- Hinkle, Jr., L. E., & Wolff, H. G. (1956). Communist interrogation and indoctrination of "enemies of the states": Analysis of methods used by the communist state police (a special report). *Archives of Neurology and Psychiatry*, 76, 115–174.
- Hoyt, Ruth. (7 May 1956). Proceedings of Fourth Symposium 1952 was distributed (Secret). Opinion of George Cooper, Q.C. (Appendix 22).
- Hunt, L. (1991). *Secret agenda: The United States government, Nazi scientists, and Project Paperclip, 1945 to 1990*. New York: St. Martin's Press.
- Ignatieff, M. (2001, April 1). What Did the C.I.A. Do to His Father? *New York Times Magazine*, 56–61.
- Katz, J. (1993). "Ethics and clinical research" revisited: A tribute to Henry K. Beecher. *The Hastings Center Report*, 23, 31–39.
- Koch, E. R., & Wech, M. (2003). *Deckname Artischocke*. Munich: Random House.
- KUBARK Counterintelligence Interrogation. (July 1963). File: Kubark, Box 1. Washington, DC: CIA Training Manuals, National Security Archive.
- Leake, C. D. (1955, June 7). Letter to Henry K. Beecher. Box 6, National Security Archive.
- Lee, M. A., & Shlain, B. (1985). *Acid dreams: The complete social history of LSD: The CIA, the sixties, and beyond*. New York: Grove Press.
- Les victimes canadiennes d'un programme de la CIA veulent poursuivre Ottawa. (2007, January 8). *Le Devoir*. Retrieved June 3, 2007, from <http://www.ledevoir.com/2007/01/08/126752.html>
- Levine, A. (2007). Collective unconscionable. *The Washington Monthly*. Retrieved May 28, 2007, <http://www.washingtonmonthly.com/features/2007/0701.levine.html>
- Lewis, N. A. (2004, November 30). Red Cross finds detainee abuse in Guantánamo. *New York Times*, 1.
- Lifton, R. J. (1986). *The Nazi doctors: Medical killing and the psychology of genocide*. New York: Basic Books.
- Lund, Major A. R. (1951, May 26). Letter to whom it may concern. Box 6. National Security Archive.
- Marks, J. (1979). *The search for the "Manchurian Candidate": The CIA and mind control*. New York: Times Books.
- McCoy, A. W. (2006). *A question of torture, CIA interrogation from the cold war to the war on terror*. New York: Metropolitan Books.
- Meek, J. (2005, February 18). Nobody is talking. *The Guardian*. Retrieved August 20, 2007, from <http://www.guardian.co.uk/afghanistan/story/0,,1417225,00.html>.
- Meeting at Ritz Carleton Hotel (1951, June 1). Handwritten Note titled "PA 2-1-[illegible]-38, Opinion of George Cooper, Q.C. (Appendix 21).
- Memorandum to OMS 17/9, Answer: OMS 17/9. (1954, September 14). Opinion of George Cooper, Q.C. (Appendix 23).
- Milgram, S. (1964). Group pressure and action against a person. *Journal of Abnormal and Social Psychology*, 9, 137–143.
- Milgram, S. (1974). *Obedience to authority: An experimental view*. New York: Harper & Row.
- Miller, A. G. (1986). *The obedience experiments: A case study of controversy in social science*. New York: Praeger.
- Milner, P. N. (1992, November 10). Letter to the editor, *McGill Tribune*. (From personal papers of Donald O. Hebb, Kindly provided by Mary Ellen Hebb.)
- Montreal woman tries to launch suit over brainwashing. (2007, January 10). *The Canadian Press*. Retrieved June 3, 2007, <http://www.cbc.ca/canada/montreal/story/2007/01/10/qc-cia20070110.html>
- Moreno, J. D. (2000). *Undue risk: Secret state experiments on humans*. New York: W.H. Freeman.
- Morton, N. W. (1 January 1953). Letter to Dr. D. O. Hebb. Opinion of George Cooper, Q.C. (Appendix 23). National Security Archive. Washington, DC: CIA Behavior Control Experiments Collection.
- Nickson, E. (1994, October 16). My mother, the CIA and LSD. *The Observer (London)*, 48–52.
- Nuremberg trial to end this week. (1946, August 28). *New York Times*, 4.
- Oshinsky, D. M. (2005). *Polio: An American story*. New York: Oxford University Press.
- Page, H. E. (1954). The role of psychology in ONR. *The American Psychologist*, 9, 621–628.
- Perley, S. (1992). The Nuremberg Code: An international overview. In G. J. Annas & M. A. Grodin (Eds.), *The Nazi doctors and the Nuremberg Code: Human rights in human experimentation* (pp. 149–168). New York: Oxford University Press.
- Personal communication. (2006, March 13). McGill University Medical School graduate.
- Project Title: Neuropsychiatry and Stress, Addendum. Beecher (MD 92). Final Report, Response of Normal Men to Lysergic Acid Derivatives (Di- and Monoethylamide). (1954, December 31). Box 6. National Security Archive.
- Pruitt, R. (1993, January 18). *Camp King: A casern with a past*. *The Stars and Stripes*, 18–19.
- Rauh, Jr., J. L., & Turner, J. C. (1990). Anatomy of a public interest case against the CIA. *Hamline Journal of Public Law and Policy*, 11, 307–363.
- Rothlin, E., Chief Pharmacologist, Sandoz Co. Basel, Switzerland. (n.d.) d-Lysergic acid diethylamide (LSD 25). Box 6. National Security Archive.
- Rothman, D. J. (1991). *Strangers at the bedside: A history of how law and bioethics transformed medical decision making*. New York: Basic Books.
- Sanford, F. N. (1954). Summary report of the 1954 annual meeting. *The American Psychologist*, 9, 708–718.
- "Schreiber, Dr. Walter P., 15 December 1949" (photographic facsimile) in Koch, E. R., & Wech, M. (2003). *Deckname Artischocke* (p. 94). Munich: Random House.
- Scott, P. D. (1992). *Listening to the candle: A poem on impulse*. Toronto: McClelland & Stewart.
- Scott, P. D. (2006, August 10). Personal Communication, Melbourne, Australia.



- Shotland, M., & Yeo, R. (1996). Introduction. *Telling lives in science: Essays on scientific biography* (pp. 1–44). Cambridge: Cambridge University Press.
- Silver, A. M. (1993). Questions, questions, questions: Memories of Oberursel. *Intelligence and National Security*, 8, 199–213.
- Simpson, C. (1994). *Science of coercion: Communication research & psychological warfare 1945–1960*. New York: Oxford University Press.
- Slotten, R. A. (2004). *The heretic in Darwin's court: The life of Alfred Russel Wallace*. New York: Columbia University Press.
- Solandt, O. M. (1954, January 25). Letter to the minister. Opinion of George Cooper, Q.C. (Appendix 23).
- Solandt, Dr. O. M. (1954, August 3) Letter to D. M. Watters. Opinion of George Cooper, Q.C. (Appendix 24).
- Soloman, P., et al., (Eds.). (1961). *Sensory deprivation: A symposium held at Harvard Medical School*. Cambridge, MA: Harvard University Press.
- Statement by Dr. G.S. Field (n.d.). Opinion of George Cooper, Q.C. (Appendix 23).
- Tank test linked to brainwashing. (1956, April 15). *New York Times*, 18.
- Taylor, T. (1992). Opening statement for the prosecution December 9, 1946. In G. J. Annas & M. A. Grodin (Eds.), *The Nazi doctors and the Nuremberg Code: Human rights in human experimentation* (pp. 71–75). New York: Oxford University Press.
- Thomas, G. (1988). *Journey into madness: Medical torture and the mind controllers*. London: Bantam Press.
- Turner, A. M. (1947, February 7). Letter to Dr. Henry K. Beecher. Box 6. National Security Archive.
- Turner, A. M. (1947, March 24). Letter to Dr. Henry K. Beecher. Box 6. National Security Archive.
- Vienneau, D. (1986, April 14). No secrets hidden from CIA, former official says. *The Toronto Star*, A10.
- Vienneau, D. (1986, April 16). Ottawa knew of brain-washing: Ex-civil servant. *The Toronto Star*, A2.
- Vienneau, D. (1986, April 17). Colleague says McGill doctor probably unaware of CIA role. *The Toronto Star*, A8.
- Von Felsing, J. M., Lasagna, L., & Beecher, H. K. (1956). The response of normal men to lysergic acid derivatives (di- and mono-ethyl amides). *Journal of Clinical and Experimental Psychopathology*, 17, 414–428.
- Von Felsing, J. M., Lasagna, L., & Beecher, H. K. (1957). Drug-induced mood changes in man: 2. Personality and reactions to drugs. *Journal of the American Medical Association*, 157, 1113–1119.
- Watters, D. M. (1954, July 26). Letter to Dr. O. M. Solandt. Opinion of George Cooper, Q.C. (Appendix 23).
- Weinstein, H. M. (1990). *Psychiatry and the CIA: Victims of mind control*. Washington, DC: American Psychiatric Press.
- Welsome, E. (1999). *The plutonium files: America's secret medical experiments in the cold war*. New York: Delta.
- Wexler, D., Mendelson, J., Leiderman, H., & Solomon, P. (1958). Sensory deprivation: A technique for studying psychiatric aspects of stress. *A.M.A. Archives of Neurology and Psychiatry*, 79, 225–233.
- Zimbardo, P. (2007, January). When good people do evil. *Yale Alumni Magazine*, 70, 41–47.