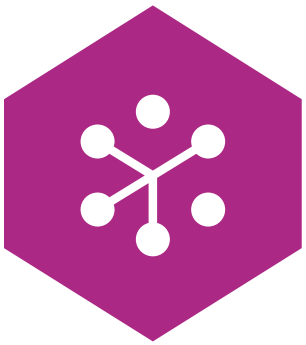

VOLUME 16 ISSUE 1

The International Journal of

Interdisciplinary Civic and Political Studies

Expanded Perspective and Elite Disobedience

The Case of Air Force Major Michael William Devlin

LISA MARTINO-TAYLOR

COMMON GROUND

THESOCIALSCIENCES.COM

THE INTERNATIONAL JOURNAL OF INTERDISCIPLINARY CIVIC AND POLITICAL STUDIES
https://thesocialsciences.com
ISSN: 2327-0071 (Print)
ISSN: 2327-2481 (Online)
https://doi.org/10.18848/2327-0071/CGP (Journal)

First published by Common Ground Research Networks in 2021
University of Illinois Research Park
60 Hazelwood Drive
Champaign, IL 61820 USA
Ph: +1-217-328-0405
https://cgnetworks.org

The International Journal of Interdisciplinary Civic and Political Studies is a peer-reviewed, scholarly journal.

Common Ground Research Networks, a member of Crossref

PEER REVIEW
Articles published in *The International Journal of Interdisciplinary Civic and Political Studies* are peer reviewed using a two-way anonymous peer review model. Reviewers are active participants of the Interdisciplinary Social Sciences Research Network or a thematically related Research Network. The publisher, editors, reviewers, and authors all agree upon the following standards of expected ethical behavior, which are based on the Committee on Publication Ethics (COPE) Core Practices. More information can be found at
https://cgnetworks.org/journals/publication-ethics.

ARTICLE SUBMISSION
The International Journal of Interdisciplinary Civic and Political Studies publishes biannually (June, December). To find out more about the submission process, please visit
https://thesocialsciences.com/journals/call-for-papers.

ABSTRACTING AND INDEXING
For a full list of databases in which this journal is indexed, please visit https://thesocialsciences.com/journals/collection.

RESEARCH NETWORK MEMBERSHIP
Authors in *The International Journal of Interdisciplinary Civic and Political Studies* are members of the Interdisciplinary Social Sciences Research Network or a thematically related Research Network. Members receive access to journal content. To find out more, visit https://thesocialsciences.com/about/become-a-member.

SUBSCRIPTIONS
The International Journal of Interdisciplinary Civic and Political Studies is available in electronic and print formats. Subscribe to gain access to content from the current year and the entire backlist. Contact us at cgscholar.com/cg_support.

ORDERING
Single articles and issues are available from the journal bookstore at https://cgscholar.com/bookstore.

OPEN RESEARCH
The International Journal of Interdisciplinary Civic and Political Studies is Hybrid Open Access, meaning authors can choose to make their articles open access. This allows their work to reach an even wider audience, broadening the dissemination of their research. To find out more, please visit
https://cgnetworks.org/journals/open-research.

DISCLAIMER
The authors, editors, and publisher will not accept any legal responsibility for any errors or omissions that may have been made in this publication. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Expanded Perspective and Elite Disobedience: The Case of Air Force Major Michael William Devlin

Lisa Martino-Taylor,[1] Southern Illinois University Edwardsville, USA

Abstract: This case study is an account of a decorated officer who in a collision of conscience versus duty, lost his military career after questioning orders regarding elite deviance by US Air Force officials. Michael Devlin, Jr., pilot and commanding officer of Operation Ranch Hand which undertook chemical warfare in South Vietnam, was forced out of the US Air Force when he questioned orders to spray unidentified chemicals over a civilian-populated area in Texas, USA. This case supports the relational model in that role strain and competing social networks created justifications for disobedience and highlights how elite deviance can be disrupted through expanded perspectives.

Keywords: Disobedience, Deviance, Vietnam War, Chemical Weapons, Biological Weapons

Military Norms and Conformity

Sanford Dornbusch (1955) described military academies as "assimilating institutions" where recruits must conform to institutional norms and become part of the military structure. New recruits thus adopt "a unity of experience and of orientation, out of which may develop a community of purpose and action."[2] Assimilation continues throughout the military career through shared norms that extend deeply throughout the structure, and where nonconformity risks sanction within a closed US military justice system. Personnel conform to institutional norms voluntarily or through coercive sanctions and controls, whereby the structure and locus of control is preserved. Indeed, "few social institutions—excepting perhaps the prison—rely so heavily on coercion as does the military…[and] while each act of submission undergirds the rightfulness of those in charge to remain so, each act of sanctioning affirms the legitimacy of the distinction made between leaders and followers" (Stevenson 1990, 1191).

Indeed, there is strong *esprit de corps* within the military structure that arises from assimilation and shared experiences. Partnered with a closed-world structure which restricts outside influences and norms, this can create what Fred Emil Katz referred to as a "moral myopia," where "exclusive focus on one's work-related task can obscure large moral issues, and moral consequences can be ignored" (Katz 1993, 91). In a strict military hierarchy, one is trained to complete the mission and not ask questions, thereby engineering moral myopia. Not only is there limited space for multiple roles, but even the role of soldier can be limited to a narrow set of compartmentalized duties.

The author presents an original case study of US Air Force Major Michael Devlin whose broadened post-Vietnam perspective informed and shifted values that abruptly clashed with US military goals. This article illuminates processes that can disrupt elite deviance within the military structure (and likely other organizations) in support of Hundman and Parkinson's relational model. Devlin was a decorated pilot who flew and commanded one of the most

[1] Corresponding Author: Lisa Martino-Taylor, 1236 Peck Hall, Department of Sociology, Southern Illinois University Edwardsville, Edwardsville, IL, 62026, USA. email: lismart@siue.edu

[2] Assimilation was described by Park and Burgess in 1921 as "a process of interpenetration and fusion in which persons and groups acquire the memories, sentiments, and attitudes of other persons and groups, and by sharing their experience and history, are incorporated with them in a common cultural life" as cited in Dornbusch (1955, 316–321).

The International Journal of Interdisciplinary Civic and Political Studies
Volume 16, Issue 1, 2021, https://thesocialsciences.com

ISSN: 2327-0071 (Print), ISSN: 2327-2481 (Online)
https://doi.org//10.18848/2327-0071/CGP/v16i01/89-103 (Article)

storied planes in US military aviation history during Operation Ranch Hand in South Vietnam. After his return from Vietnam, Devlin questioned orders regarding a low-altitude chemical spray mission that rerouted his plane over civilian-populated communities in Texas, and US Air Force officials construed Devlin's questions as an act of disobedience. After a rapid series of harsh sanctions, Devlin had to engage in self-help measures to preserve his professional reputation. Devlin's family has claimed that officials forced Devlin out of the US Air Force and removed virtually all his official military records from public view.

Disobedience and the Military Structure

Within the US military structure, individual interpretation of values such as honor, responsibility, and integrity can either be upheld or clash with military goals. The hierarchical structure of the military offers layers of social control agents, each ascribed with unique and increasingly persuasive measures as the hierarchy progresses, to ensure compliance with military norms and lock in norm continuity.

Elite disobedience (referred to in this article as "disobedience") is defined herein as the refusal of well-trained, experienced officers to obey direct orders from a superior officer(s) within an established chain of command. More specifically in this case, orders were questioned by an officer and these questions were construed as a refusal by the officers in charge. This definition acknowledges that the closed military structure defines norms internally, in ways that can align or conflict with extra-organizational social norms. Moreover, the US military sanctions disobedience uniquely and wholly separate from society, reinforcing their closed structure. Undoubtedly, the obligation to obey is underpinned by powerful military norms and sanctions; however, social norms exist outside the military structure, precede the military structure in terms of the socialization process, and exist in conflict with the military structure. Deviance is defined in this article as a violation of societal norms and elite deviance refers to a violation of societal norms by individuals who have some degree of power and status or prestige.

Theoretical Approaches to Disobedience

There is an inherent tension between the rights of the state to govern effectively and the right of citizens to make independent judgments and obey one's conscience (Kelman and Hamilton 1989). Further, "the challenge to authoritative orders on the grounds that they are inconsistent with fundamental societal values represents an appeal to higher authority within the system in the sense that the promotion of certain values—relating to the common good—is the ultimate source of the system's legitimacy" (Kelman and Hamilton 1989, 145). This argument highlights how disparate values and norms can emerge from common concerns, but can be defined differently from within the organization versus externally. Intertwined social roles can present a tangle of complex and competing social norms whereby old norms are questioned and the acceptance of new norms can lead to episodes of disobedience.

The relational approach as it applies to military disobedience builds on the concept of role strain, arguing that conflicting roles lead to an interpretation of military orders based on an individual's identifications and position in multiple social networks that create motivations and justifications for disobedience (Hundman and Parkinson 2019). In this case study, the questioning of norms and lack of immediate compliance was construed as disobedience by superior officers.

To Michel Foucault, soldier obedience is of primary concern, as it implies a "form of a total and exhaustive obedience in their conduct to whatever the imperatives of the state may be" whereby a "policy of coercions" produces "docile bodies" of soldiers to serve as unquestioning machines under tight and constant control by military officials (Foucault [1979] 1995, 138; [1977] 2007). Yet, several scholars have countered this, noting that even in coercive wartime

conditions, soldiers retain autonomy and responsibility for their actions. Katz highlighted how organizational subcultures utilize individual autonomy to augment formal rules and creatively advance the goals of a state-organized bureaucracy, such as the case during the Nazi holocaust (Katz 1993, 2004). Indeed, officers have autonomy that they frequently utilize, and they are encouraged to make autonomous decisions provided they advance the goals of the bureaucratic state. Nevertheless,

> Those who have learned how to exercise authority themselves, are less likely to feel that the processes by which authorities arrive at their decisions and the knowledge and wisdom they bring to bear on these decisions are so mysterious that average citizens cannot penetrate them….[they] thus are aware of the ambiguities within which authorities operate and the inevitable fallibility of authoritative decisions. They know that, like themselves, authorities can be wrong. (Kelman and Hamilton 1989, 324)

The Michael Devlin Case

Roughly a two-hour drive from Omaha, Nebraska, Michael William Devlin Jr. was born on the back edge of the Great Depression to parents who ran a hatchery and sold fresh eggs to the community. When Devlin played center on the high-school football team, Albion, Nebraska had a population of roughly 2,000 residents. As a freshman at Creighton University, Devlin was a walk-on player for the basketball team, a spot usually reserved for senior classmen, and like other young men in his community who worried about a potential draft for the Korean War, Devlin enlisted in the US Air Force in 1954. An outstanding athlete, Devlin played basketball for the air force and earned the title of "Most Valuable Player" of the Armed Forces League. In 1955, Devlin departed for 475 days of foreign service, began pilot training in 1959, and twice completed advanced survival training. Devlin was stationed at Pope Air Force Base (AFB) in North Carolina, later moving to Langley Air Force Base in Virginia where he piloted C-123s, a workhorse of US combat zones including Vietnam.

In 1961, Devlin and other crewmen volunteered for a secret mission after Captain Carl Marshall visited Pope AFB to recruit C-123 pilots (Devlin 1981). Lt. Col. Robert Gleason recalled the commander asking the pilots if they were willing to "fly and fight in support of a friendly foreign nation…where you could not wear the US uniform…and agree to do so knowing that your government might choose to deny that you are a member of the US military, or even associated with this nation…" (Whitcomb 2008). Because the US was not officially at war, the number of American soldiers allowed in Vietnam could not exceed 800; however, the US military was "sneaking all these people over there" (Hodgin 2003). Gleason, Devlin, and several other pilots agreed to fly for Operation Farmgate, later known as Operation Ranch Hand. The pilots and crew

> Did not carry Geneva Convention cards. Such subterfuge was necessary. In dispatching the air commandos to South Vietnam, the United States was violating the *Geneva Accords* of 1954 that established the two Vietnams. The American leadership wanted to be able to plausibly deny that it had military forces operating in the South. (Whitcomb 2008)

Six C-123 warplanes from Pope AFB were retrofitted with MC-1 spray tanks, and redesignated as UC-123s (Collins 1967). Ranch Handers were charged with the expressed goal of defoliating the jungle and killing rice crops (Collins 1967; Hodgin 2003). The pilots practiced flying in formations of three or four UC-123s before they were officially allowed to enter Vietnam in 1962; however, Devlin's records note a "counterinsurgency experience" completed in Vietnam in November 1961. Farmgate became Operation Ranch Hand when their official inaugural

spray mission took place on January 13, 1962 under Ranch Hand Commander Captain Carl Marshall (Buckingham 1982). Michael Devlin would later take on a similar role as a Ranch Hand Commander.

A Rainbow of Herbicides and Weapons

Ranch Hand planes were retrofitted to spray herbicides that derived their name from the colored stripe around the 55-gal barrels that held the chemicals. Systematic spraying began in Vietnam by September 1962 using Agents Purple, Pink, and Green through 1964 at a total of approximately 2,400,000 liters.[3] Chemicals used during this early part of the operation had very high levels of dioxin—2,3,7,8-tetrachlorodibenzo-*p*-dioxin, also known as 2,3,7-8 TCDD (Lavallard, n.d.).

Agent Orange was the most known and utilized chemical weapon in Vietnam; the compound was a 50:50 mix of 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T), and contained 2,3,7-8 TCDD. Orange was banned by the US Environmental Protection Agency in April 1970 due to health concerns regarding TCDD, which is one of the deadliest human-made chemicals in existence. Agent Orange was eventually replaced with Orange II and although the effects were similar, lower amounts of Orange II were used in Vietnam.

Agent Purple's formulation was almost identical to Orange, combining 2,4-D and 2,4,5-T; however, Purple's dioxin content was higher than Orange, making Purple more dangerous in terms of exposure (World Health Organization [WHO] 1970). Agent Pink and Agent Green also contained 2,4,5-T, and Picloram combined with 2,4-D was known as Agent White or Tordon 101—a proprietary product of Dow Chemical. Agent White was used in Vietnam between 1966 and 1971 to reportedly kill trees, and an estimated 20,556,525 L were sprayed in Vietnam.[4]

Agent Blue was composed of cacodylic acid (65%), dimethylarsinic acid, and sodium cacodylate, and as much as 8,182,000 L were sprayed in Vietnam between 1962 and 1964 ("Agent Orange" 2005; See also CRHEVVEH 2014; Schecter 2012). Liquid-based Agent Blue was sprayed in Vietnam from 1962 to 1971 at an estimated 4,741,381 L, comprising 6.4 percent of herbicides sprayed in the Republic of South Vietnam (Stellman et al. 2003). Agent Blue was primarily used for destruction of crops such as wheat and rice and is linked to bladder cancer (Irish, Darrow, and Minarik 2009).

Rainbow herbicides are widely considered to be a class of chemical weapons. Chemical weapons include solids, gases, powders, smokes, or liquid, "divided into particles small enough to float in the air for extended periods of time. Smokes are aerosols, but aerosols are not necessarily always visible" (USDAAF 1958). The US Army and Air Force required that chemical weapons be "very toxic, produce effective smoke screens, or have powerful incendiary properties…[and be] capable of being disseminated from a device practicable for field use in sufficient concentration to produce the desired effect on the desired target" (USDAAF 1958). Military documents noted that chemical weapons should possess such inherent properties that complete protection from them is difficult (USDAAF 1958).

[3] This is approximately 634,000 gallons, however, estimates of the amount of agents sprayed in Vietnam vary widely. See Stellman, Jeanne Mager and Steven Stellman, Columbia University; "Agent Orange Data Warehouse" (2011). http://www.workerveteranhealth.org/milherbs/new/; also Westing, A.H. (1976). "Ecological Consequences of the Ssecond Indochina War", Stockholm International Peace Research Institute, Almgrist and Wiksel International Stockholm, Sweden; Committee on the Effects of Herbicides in South Vietnam. (CEHSV) (1974) 1974. *Part A. Summary and Conclusions*. Washington, DC: National Academy of Sciences; also Craig, D.A. (1975). *Use of Herbicides in Southeast Asia. Historical Report*, San Antonio Air Logistics Center, Directorate of Energy Management, Kelly AFB, Texas.

[4] "Agent Orange" Product Liability Litigation; Decision MDL No. 381, 04-CV-400; 373 F. Supp. 2d 7; 2005 U.S. Dist. LEXIS 3644; CCH Prod. Liab. Rep. P17,342; March 10, (2005); See also Veterans and Agent Orange (National Academy of Sciences (NAS) (National Academy of Sciences, Committee to Review the Health Effects in Vietnam Veterans of Exposure to Herbicides, 2014).

Public and international resistance to chemical weapon use in South Vietnam grew in the mid-1960s, and "the intensity and virulence of the opposition seems to have been unanticipated" by President Johnson's administration (Neilands et al. 1972, 32). In response to growing public concern, White House officials scrambled to control public perception regarding the harmful effects of chemical weapons by referring to them as "riot control agents" and touting their use as "humanitarian aid" in military operations (Neilands et al. 1972, 32). Despite public criticism, the US continued to expand the chemical weapons program, spending US$70.8 million in 1969, which was an increase of US$24.9 million from the previous year (Neilands et al. 1972).

The Ranch Hand Mission

Ranch Hand commanders such as Devlin oversaw aerial photos, intelligence, formal mission briefings, and coordination of warplanes and helicopters, and under Devlin's command the program expanded. Two Ranch Hand UC-123s were modified to increase herbicide flow, and between September and October 1962, the US Air Force sent three additional modified C-123s, whose missions were personally observed by the Commanding General of the US Army Chemical Corps (Collins 1967). In just five weeks from October to November 1963, Michael Devlin commanded or piloted at least 25 combat missions and received numerous awards. Indeed, Devlin's plane "Patches," is the most celebrated plane in the air force squadron of UC-123s, and there is no doubt that Patches' survival was due to its experienced commander and crew.

> [Patches] was almost sacred to the Ranch Hands and they hoped to eventually get the aircraft transferred to the Air Force Museum. By 1967 *Patches* had taken well over 500 hits and the spray squadron, fearing that the venerable aircraft might be shot down, decided to designate it as the permanent insecticide spray plane. (Cecil 1986, 94)

Ranch Handers were known for bravado and exploits, earning status by surviving the riskiest of missions. Captain Mike Devlin was not only part of this subculture, but was a Ranch Hand commander through much of it. In 1962, Ranch Hand aircraft flew on 60 defoliation missions while dispersing 49,240 gal. of rainbow herbicides over 20 square miles, and in 1967, nearly 2 million gal. of chemical herbicides were dispersed over South Vietnam in just six months (Cecil 1986). Much of the early coordination took place at the informal Ranch Hand headquarters at 62 Tran Hung Dao in Saigon, which was Mike Devlin's apartment (Devlin 1981).

In 1966, Ranch Hand crews began planning for Operation Flyswatter which involved two modified Ranch Hand C-123 aircraft (aka Bug Birds) spraying malathion (US Institute of Medicine 2011). Bug Birds flew without escort aircraft and were not camouflaged. Patches was the first aircraft diverted for use in Flyswatter, and in preparation the plane was "stripped of its camouflage paint and coated with an alodine compound to retard the corrosive effects of the poison" (Haulman, n.d.). Patches began Vietnam malathion missions in October 1966, and in 1967 it was moved to Bien Hoa Air Base (Haulman, n.d.). During Flyswatter, planes sprayed over 1.67 million gal. of malathion in South Vietnam and malathion was also "sprayed over nine major US bases and adjacent sites every 11–14 days" (IM(US)CBWNVV and AOE 2011). Malathion is an organophosphate insecticide that via ingestion, skin absorption, or inhalation can lead to nervous system effects, loss of consciousness, and convulsions (Extoxnet 1993; United States Agency for Toxic Substances and Disease Registry 2003). Michael Devlin had a particularly strong disdain for malathion (Yoest 2020).

Military Sanctions for Disobedience

A dizzying series of accolades, promotions, and accomplishments filled up much of the decade for Mike Devlin. He was awarded a Commendation Medal for meritorious achievement in 1964, and two Oak Leaf Cluster Awards. An Air Medal was awarded to Devlin in 1963 for heroism and meritorious achievements in aerial flight and combat, and Devlin's unit was awarded the Air Force Outstanding Unit Award for outstanding achievement and exceptionally meritorious service. By early 1967 Devlin had married, was a new father, and had been promoted. Major Mike Devlin was Mission Commander of the 4,500th Air Base Wing, and a certified flight examiner at Langley Air Force Base in Virginia. On September 12, 1967, Devlin flew from McGuire Air Force Base, New Jersey to Ohio on a low-level spray mission. He expressed concern to his wife that children of Ranch Handers had birth defects that he attributed to chemical exposure in Vietnam (Yoest 2020).

On September 17, 1967, Devlin was assigned as pilot-in-command on a local spray mission to reportedly suppress mosquitos and fire ants. Several days later, Hurricane Beulah made a landfall in Texas and Devlin flew there to observe the flood zone where Gulf waters had pushed inland ten or twenty miles, leaving drowned and bloated livestock in its wake. On or about September 29, 1967, Devlin received orders to return to Texas and conduct aerial spraying to address potential outbreaks of diphtheria and cholera in the flood zone from the dead cattle he had observed. When Devlin arrived at the Langley hangar to begin his mission, he saw that the spray tanks on his plane had been changed and contained an unidentified material. Devlin also noticed a last-minute flight path modification that rerouted his plane over civilian-populated areas. Devlin asked his superior officer what chemical formulation the tanks contained, and he was reportedly told to "shut up and spray it" (Avery 2020; Devlin 1981).[5] When Devlin pointed out that his flight path had also been changed his colonel responded, "Are you contradicting a direct order?" (Avery 2020; Devlin 1981) Devlin was ordered to begin the Texas mission and ask no questions.

In his off-duty time Mike Devlin often met an air force general for rounds of golf. Devlin called his golf partner and described the mission, flight path alteration, and unmarked chemicals. The general reportedly did not know what was in the tanks, but said he would get to the bottom of it and call Devlin back. Devlin left the hangar and went home, and within the hour two US Air Force medics arrived. They reportedly handed Devlin a paper cup containing an unidentified liquid that he was ordered to drink, and told him that he was having a "nervous breakdown" and anxiety attack. The medics placed Devlin in a straitjacket and whisked him away. Devlin's 25-year-old wife Mary witnessed the event and stated that at no point did the medics tell her where they were taking her husband. She later recalled, "they said he was suffering from manic-depression, put him in a straitjacket and sent him to a hospital in Dayton, Ohio" (Yoest 2020). Devlin was heavily sedated, restrained, and taken without his or his wife's consent from Langley AFB to Wright-Patterson AFB, 600 miles away from his family and friends. After nearly a week and with no word still as to where her husband was, Mary Devlin's family contacted their Congressional representative to locate the missing officer.

Approximately one week after being taken from his home Michael Devlin awoke in a hospital and "didn't know what he was doing or where he was" (Avery 2020). Devlin recalled medics entering his room and handing him a white paper cup containing a pill, which they ordered him to swallow. Concerned and confused, Devlin removed the pill from his mouth when they left the room. Medics reportedly returned that evening with another pill, and Devlin again spat it out. When he awoke the following morning, his head felt clearer. Devlin recognized the grounds of Wright-Patterson AFB outside a window, and his subsequent actions

[5] J. Avery (pseudonym), phone interview with author, April 7, 2020); T. Devlin (1981).

saved his professional reputation. Devlin surreptitiously left his room, located an unlocked office and phone, and called his wife. He stated that he was being held against his will at Wright-Patterson Air Force Base, and instructed her to come immediately and check him out of the facility. Mary Devlin Yoest later recalled, "I took our one-year-old and went there. I visited him every day, but he was always doped up. They were giving him something to keep him that way. One day when given the pill he put it under his tongue and didn't swallow it. They then left [*sic*] him out and was allowed to return to Virginia" (Yoest 2020). When recalling the event, Michael Devlin later asked a family member, "What the hell would they give me where I couldn't even function?" (Avery quoting Devlin 1981).

Thirty-three-year old Michael Devlin had spent nearly half of his life in the US Air Force and had completed over 4,000 flight hours. With no history of mental illness, on October 5, 1967, the recently promoted senior pilot was officially grounded. Within an hour of being ordered to command an out-of-state mission, he was suddenly deemed so "incapacitated" that he was drugged and whisked out of state to a secret facility. Merely asking what was in the tanks of his airplane for the Texas mission set wheels in motion that permanently changed Devlin's life. After his release from Wright-Patterson AFB, Major Michael Devlin was abruptly informed that he was no longer welcome in the United States Air Force (Yoest 2020; Devlin 1981; Avery 2020).

As an original Ranch Hand pilot and commander of aerial operations overseeing the use of chemical weapons in Vietnam, and with a series of promotions and accolades that recognized his unique skills and leadership abilities, Mike Devlin had excelled and flourished in the Ranch Hand culture. But when assigned the spray mission in Texas Devlin paused, which was inconsistent with his routine chemical missions. What was it about the Texas mission that caused Devlin to question orders that ultimately led to swift and dramatic sanctions against one of the US Air Force's finest pilot-officers?

Devlin observed that the flight path alteration placed human populations directly at risk of exposure to unidentified chemicals. Devlin was concerned that there had occurred a fundamental alteration of the mission from human protection to human testing, possibly involving biological weapons or "an unapproved gene-altering agent" (Avery 2020; Devlin 1981). One family member said, "they wanted to make damn sure it was going to be sprayed, and whatever it was they wrecked his career over it" (Avery 2020). Devlin's concerns about domestic biological weapons experiments in civilian areas were not unsubstantiated or unfounded when examined within the larger context of the US military's bioweapons testing and development program.

Bioweapons and Simulants—US and UK

Biological weapons (bioweapons, bacteriological, bacterial weapons, or BW) are a class of weapons that include:

> Microorganisms ("germs") such as bacteria, fungi, viruses, rickettsiae, and substances (toxins) derived from living organisms (as distinguished from synthetic chemicals used as gases or poisons) to produce death or disease in humans, animals, or plants. For BW purposes, the most effective and efficient route of entry of disease microorganisms into the human and animal body is normally by breathing into the lungs. (US Army 1977)

As early as 1932, the League of Nations' International Committee on Chemical and Biological Warfare assumed the unambiguous position that "their continued possession and development [of bioweapons] by nations was regarded as both dangerous to mankind and utterly immoral" (Stockholm International Peace Research Institute 1971).[6] In 1941, the US National Academy

[6] It is notable that chemical weapons today are far more potent than at the time the statement was made.

of Sciences convened a bacteriological warfare committee for military development and offensive use of biological weapons that eventually incorporated the US Army, Navy, and Air Force (Guillemin 2005; Endicott and Hagerman 1998). By the 1950s, the US Air Force had a special division in the Office of Atomic Energy at Air Force headquarters to organize the biological and chemical warfare programs (Endicott and Hagerman 1998). Air Force Vice Chief of Staff General Nathan Twining, who was responsible for operational planning for bioweapons, "directed that bacteriological and chemical warfare should have the same priority with the same principles, concepts, and operational procedures" as the atomic energy program (Endicott and Hagerman citing Miller 1957, 72).

The bioweapons program grew to be one of the largest "wartime scientific projects in American history, second only to the Manhattan Project which had created the atomic bomb" (Endicott and Hagerman 1998, 31). By 1951, bioweapons were a "major growth industry" in the US military, and a Department of Defense report on bioweapon generators showed that an airbase could be contaminated directly and also indirectly with secondary aerosols from vehicular traffic (Endicott and Hagerman 1998). Department of Agriculture facilities in Texas as well as Puerto Rico, and Avon Park, Florida were used to test biological weapons (Stockholm International Peace Research Institute 1998). From February 11 to 21, 1951, Carswell AFB in Fort Worth, Texas was sprayed with bioagents *Aspergillus fumigatus* (AF), *Bacillus subtillis variant niger* aka *Bacillus globigii* (BG), and biotoxin *Serratia marcescens* (SM) with fluorescent particles (US Army 1977).[7] Eglin AFB in western Florida was targeted for experiments using bioagents *hog cholera* on July 14, 1951, *bacillus globigii* (BG) in June and July 1953, and a combined BG and *serratia marcescens* (SM) in 1956 and 1957 (US Army 1977). Eglin AFB was again used for BG field tests in May through June 1958 (US Army 1977).

By 1953, the air force had developed low-altitude spray equipment for biological pathogens for anti-personnel and anti-livestock use and to contaminate roads, streets, freight yards, docks, structures, stockyards, forage, and crops (Endicott and Hagerman 1998). In 1952, the army discussed releasing biological pathogens in open-air experiments on a full-sized city or using "simulants" of the "toxic agents on real people" (Sawyer and Allen 1994). The term "simulants" was used by military officials in reference to human/lab-created bioweapons.

Like their American counterparts, British military researchers conducted at least one open-air experiment involving a radioactive cloud disseminated over populated areas without consent or knowledge of the general public, as well as other open-air biological or radiological warfare experiments from 1953 to 1964 (United States General Accounting Office 1993, 2).[8] Porton Down military scientists divided chemical and bioweapons research tasks with American and Canadian military scientists as part of a quadripartite agreement involving England, Canada, Australia, and the US. That agreement bound participant countries to conduct military experiments including open-air experiments over civilian-populated areas. In the 1950s and 1960s, chemical, biological, and radioactive materials were dispersed into the open air in "virtually every region in England and Wales" including radioactive xenon-133 experiments in the vicinity of Harwell England, bacterial clouds over South Dorset, and experiments over Swindon between 1964 and 1973 (Eggleton and Thompson 1961; Evans 1999; Humphrey 1999; Webb 2000; Gazette and Herald 2002).

Deadly biochemical agents Sarin, VX, Tabun, and Soman were released into the open air near Salisbury England via aircraft, crop sprayers, and munitions in the summer of 1967, just prior to Devlin's Texas incident, and again in August and September 1968 (UK Newsquest Regional Press 2002). Open-air chemical and bioweapons experiments were conducted in the

[7] Fluorescent particles (FP) such as Zinc Cadmium Sulfide or ZnCdS were used in military open-air military bio-chemical and radiological weapons experiments in combination with the active agent(s).

[8] The US General Accounting Office defines radiation warfare as "the use of non-bomb radioactive agents for offensive military purposes."

counties of Dorset, Somerset, Wiltshire, Berkshire, and Hampshire beginning in 1953, and expanding in 1956. In the 1960s and 1970s, live "microorganisms were sprayed extensively over populated parts of Dorset, Hampshire, and Devon" (Evans 1999, 4). In 1952, *Operation Cauldron* experiments involved the release of bubonic plague-filled clouds off the coast of Lewis in the Outer Hebrides (NW Coast of Scotland), which could have resulted in an outbreak of black death (Moyes 2005; Western Daily Press 2005). Naval officials overseeing the project allowed fishermen to be exposed to bubonic plague as their trawler passed through the bubonic cloud path. "Experts believe that about 250 chemical tests were carried out in the UK by the Ministry of Defense Laboratory between the early 1950s and late 1970s" (Mendham 2002).

In the US, Texas and other states continued to be targeted for open-air chemical and bioweapons experiments by the US military. From August 13, 1959 through February 22, 1960, the army conducted open-air experiments in North Central Texas using fluorescent particles (FP), which were often combined with chemical, biological, and radioactive agents in open-air military experiments. In May 1962, Langley pilots conducted open-air experiments at Eglin AFB using Agent Purple in at least 61 field tests using modified C-123 military aircrafts (Brown and Whittam 1962). Underscoring Devlin's concern, Langley C-123 pilots had been engaged in domestic open-air chemical weapons experiments since the early 1960s. Prior to Devlin's 1967 encounter, the army/air force had targeted Texas in at least six open-air biological experiments. In 1959, the US Army sprayed bioweapon "Rice Blast" in Beaumont, Texas.

In 1962, FP was sprayed in Oklahoma, Washington, Nevada, and Corpus Christi, Texas, and from July through August 1965 military officials conducted open-air studies using live *Lycopodium* spores (LP) with FP in Victoria, Texas. Indeed, thousands of covert open-air chemical, biological, and radiological weapons experiments were conducted by the military across North America and the UK during the Cold War.

A 1965 study outlined how manufactured glass spheres/beads containing radioactive strontium, cesium, and barium used in military "simulant" experiments had caused "significant internal" radiation doses (LeRoy, Rusk, and Hasterlik 1966). The following year—just one year prior to Devlin's Langley encounter—an air force plane dropped 22 tons of glass beads and cork particles over a 4,800 square-mile area between Corpus Christi and Freeport, Texas in 16 field tests (United Press International 1981). Air crews and field workers who collected the material "were given a cover explanation that the tests were meteorological studies in connection with air pollution, toxic fumes from industrial plants, or atomic fallout" (United Press International 1981). In 1967, the same year Devlin was ordered to spray Texas, air force pilots dispersed glass beads and fluorescent-tagged cork over Victoria, Texas, in what were likely domestic radiological weapons experiments (US Army 1977).[9]

Public concern regarding military open-air testing of microbes and live agents was heightened by the time Devlin was ordered to spray unidentified chemicals over Texas. Public concern related to bioweapons "increased sharply from 1967 to 1969 and set the stage for congressional inquiry and action" (Guillemin 2005, 119). Indeed, between 1949 and 1969, open-air tests of biological agents were conducted 239 times in the US; live bacteria were used in at least 80 experiments and in the rest active "simulants" were used (Carlton 2001). The use of so-called simulants downplayed risks to local populations as simulants were not benign, but rather manufactured pathogens that mimic naturally occurring pathogens. Further, experts report that "even benign agents can mutate into unpredictable pathogens once exposed to the elements" (Carlton 2001).

[9] US Army Activity in the US Biological Warfare Programs (Volumes I and II), US Department of the Army, February 24, (1977), reprinted in Biological Testing Involving Human Subjects by the Department of Defense, (1977), Hearings before the Subcommittee on Health and Scientific Research of the Committee on Human Resources, March 8 and May 23, 1977, United States Senate, 95th Congress, First Session.

Discussion: Broader Perspectives and Disobedience

This article considers the case of Major Michael Devlin who successfully navigated a closed military world until his roles as husband, father, and community member added complex social norms that came to sharply conflict with military norms and goals. In particular, Devlin's emergent role as father aligned with his increasing concern for public health, such as his discussions regarding birth defects in the children of Ranch Handers. This reflected a broadened post-Ranch Hand perspective and value shift that prioritized the well-being of the community-at-large. In Vietnam, Devlin had been rewarded for using his autonomy to advance military objectives related to the US chemical weapons program. However, by 1967, Devlin was concerned about unidentified spray material and a flight path that rerouted him through civilian-populated areas in Texas. When asked if Devlin's concern emerged from his role as new father, two family members said it was "totally consistent with Mike's thinking" and consistent with him as a person (Avery 2020; Yoest 2020). Devlin's emergent roles had shifted the locus of control, and extra-organizational norms suddenly clashed with closed-world military norms. Devlin's act of conscience conflicted with his position as an officer in the military structure into which he was deeply assimilated (The term "act of conscience" denotes how expanded perspectives can and do inform officers' actions despite a rigid military norm structure). Devlin's questions were constructed as disobedience by his superior officers, which resulted in a disproportionate response via sanctions that appear strikingly severe for actions that aligned with external social norms (rather than closed-world military social norms). The Devlin case supports the relational model in that role strain and competing social networks created motivations and justifications for questioning deviant subculture norms (Hundman and Parkinson 2019). Further, this case has real-world implications and applications in that even deeply assimilated closed-world norms such as those in the military, policing, and other organizations, can be punctured by the integration of broader extra-organizational norms and values through external socialization and broadened perspectives of group members.

Rupture

Michael Devlin had survived three long tours of duty in Vietnam and preferred to continue as an air force pilot, but felt an obligation to fight the stigmatizing sanctions. Devlin contacted an independent psychiatrist and flew to Washington, DC for an extensive medical examination where he was found to be "in excellent mental and physical health, with no indication of illness or defect which would prevent him from working at any occupation for which his training and ability would qualify him."[10] Devlin was relieved and vindicated, and had successfully fought his way back into the US Air Force. In response however, US Air Force officials ordered Devlin on a fourth tour of duty in Vietnam. Devlin was certain that if he returned to Vietnam that he would "come home in a body bag," so he reluctantly accepted a medical discharge (Yoest 2020; Avery 2020). He returned to the Nebraska plains with his growing family, enrolled in college, and completed a degree from the University of Nebraska Omaha. Mike Devlin became a successful commodities broker, and similar to his air force experience, he rose through the ranks to become vice-president of Merrill Lynch in Omaha, Nebraska. Some years later Devlin described how "military doctors came into his workplace at Merrill Lynch and said they wanted to run tests on him. In response, Devlin told them to get out" (Avery 2020).

Ranch Hand pilots were told by military officials that the chemical weapons they dispersed in Vietnam were harmless (Devlin 1981). Over time, Devlin had come to doubt this claim, and when air force officials stepped into the Merrill Lynch offices to offer unsolicited tests, he believed that chemical weapons had affected the health of Vietnam Veterans and their children.

[10] Letter to Michael Devlin from Albert E. Marland, Sr., M.D, February 14, 1968.

Indeed, Devlin had come to believe this by 1967 when he was ordered to spray undisclosed chemicals over civilian communities in Texas.

In 1984, Michael Devlin was diagnosed with stomach and esophageal cancer, and he died two years later at age 53. When Devlin's wife attempted to obtain his military records, Congressman Doug Bereuter (R-NE) told her that although they had located Devlin's military file, "the folder was empty" (Avery 2020; Yoest 2020). Tom Devlin also noted that his father's US Air Force records were erased or hidden from public view after Mike Devlin's air force career ended.

Contrary to his time in Ranch Hand, Mike Devlin's broadened, post-Vietnam perspective came to prioritize the humanity and health of community over the needs of a militarized state that paradoxically had persuaded Ranch Hand airmen that they were engaging in just acts on behalf of Americans rather than in acts that would harm them (Katz 2016). Indeed,

> The choice to say no…ultimately rests on our saying yes to some of the distinct qualities that make us human: a sense of personal agency, an awareness of the consequences of our actions, and a caring attitude toward our fellow human beings. (Kelman and Hamilton 1989, 338)

Sociologist Fred Emil Katz noted that evil is avoided by making a deliberate choice between competing priorities, and in this case Devlin's broadened perspective that resulted from increased external socialization encouraged a rupture from the closed-world military structure that had been his life and career for sixteen years (Katz 1993). From a broader perspective, it was the air force's actions targeting nonconsenting civilians for weapons experiments that were deviant and unacceptable. The US military's misuse of chemical, biological, and radiological weapons reflected a moral myopia, and constituted an egregious violation of extra-organizational social norms (Katz 1993). Devlin's broadened perspective and subsequent role strain resulted in questioning orders that he considered to be deviant on the part of the US Air Force, and moreover would have required his own participation in elite deviance. By construing Devlin's questions as a refusal to comply with orders, thereby constituting disobedience, air force officials initiated a rupture that was much more immediate, severe, and permanent than Devlin expected. Nevertheless, evidence presented in this article of widespread elite deviance by US military officials who had ordered an array of chemical, biological, and radiological weapons experiments on civilian populations, supports Devlin's actions as warranted and just. Undoubtedly, insular localized norms whether in the military or any other hierarchical structure, do conflict with larger social norms. Although US Air Force officials designated Devlin as disobedient and deserving of disproportionately harsh sanctions, in terms of the larger social context of their domestic weapons experiments, it was Devlin's superior officers who had engaged in elite deviance. Questions related to insular, myopic norms that enable such projects to occur without disruption, and the lack of accountability of military officials who order and engage in elite deviance are areas for future research that have real-world applications and significance.

As a young enlistee, Devlin was pulled into the high-risk bravado of Ranch Hand culture and had proven his skill and leadership as both a pilot and a commander, where he motivated and guided crew members under extreme conditions. Perhaps it was Devlin's marked shift from earlier compliance regarding chemical weapons programs that surprised his senior officers. Applying dimensions of autonomy outlined by Fred Emil Katz, Devlin was expected to continue to use his individual autonomy to augment and advance military goals in the framework of continued classified projects after his return from Vietnam, but this ultimately created role strain (Katz 1993, 2004). While balancing competing roles and social norms as father, husband, and member of the community, Devlin came to understand that the world was far more complex—and indeed more human—than military norms could ever reflect. Ironically, Devlin's charmed UC-123, Patches, which took over 500 hits in Vietnam, yet continued to fly under its skilled commander and pilot Mike Devlin, is officially retired at the National Museum

of the US Air Force on Wright-Patterson AFB where Major Michael Devlin, Jr. was sedated and locked away when he entertained an inquiry of conscience.

Methods

I was initially approached by a Devlin family member after publication of the book *Behind the Fog: How the U.S. Cold War Radiological Weapons Program Exposed Innocent Americans*. Thomas Devlin suggested that his father Michael W. Devlin, Jr.'s air force experience was connected to the US military's chemical, biological, and/or radiological weapons programs. After examining military records provided by the family, Tom Devlin connected me to family members who agreed to be interviewed. Every request for documentation and all questions were answered promptly and convincingly by the Devlin family. I came to believe and attempted to confirm as much as possible that Mike Devlin's experience had occurred exactly as his family reported.

I attempted to obtain Mike Devlin's military service records from the US National Archives (NARA). The request resulted in a response from NARA personnel that Devlin's file(s) could not be located, aligning with Mike Devlin's wife's account when she attempted to obtain US Air Force records through a member of Congress and was told that the file was empty. A NARA Archives technician at the National Personnel Records Center responded to the author's request in this way: "the military record was removed from the file area… although we have conducted an extensive search, we have not been able to locate the record." According to Thomas Devlin, "All his records have either been erased or are hidden from the public" (Devlin 2020).[11] Nevertheless, Mike Devlin retained many of his own service records which the family provided, and the author attempted to verify the authenticity of the records with a Vietnam veterans' advocate and records expert who has decades of experience assisting veterans in obtaining service records. The expert found that Devlin's records appeared to be legitimate, and he further assisted the author in specifically identifying several of many military awards that Mike Devlin earned during his air force career.

In addition, some of Mike Devlin's personal recollections were documented for Texas Tech University's Sam Johnson *Vietnam Archive—Oral History Project*. Oral histories of other Vietnam veterans, particularly John Hodgin, who also served in the original Ranch Hand program, were helpful in confirming Ranch Hand history during the identified timeframe.

Acknowledgement

Much gratitude to Thomas Devlin, Mary Yoest, and the Devlin family including "John Avery"; to Bill Elmore, Rachel Brekhus, and Dr. John Farley for their expertise and technical support; to Dr. Fred Emil Katz for his important foundational work; to Adam Loesch, Nichole Stonich, Sean Thomas, and Justin Walker for their research assistance; to Steve Taylor for his input and support; to my colleagues at Southern Illinois University Edwardsville for their collegiality and support; and to my students and former students for their enthusiasm and inspiration. Written informed consent was obtained in advance by all living participants interviewed and identified by name in this article.

[11] T. Devlin, phone communication with author, February (2020).

REFERENCES

Brown, James W., and Donald Whittam. 1962. *Modification and Calibration of Defoliation Equipment (C-123- First Modification)*. Okaloosa, FL: Eglin Air Force Base.

Buckingham, William A., Jr. 1982. *Operation Ranch Hand: The Air Force and Herbicides in Southeast Asia, 1961–1971*. Washington, DC: Office of Air Force History, United States Air Force.

Carlton, Jim. 2001. "Years Ago, the Military Sprayed Germs on U.S. Cities." *Wall Street Journal*, February 24, 2001. https://www.wsj.com/articles/SB1003703226697496080.

Cecil, Paul Frederick. 1986. *Herbicidal Warfare: The Ranch Hand Project in Vietnam*. New York: Praeger Special Studies.

CEHSV (Committee on the Effects of Herbicides in South Vietnam). 1974. *Part A: Summary and Conclusions*. Washington, DC: National Academy of Sciences.

Collins, Charles V. 1967. *Herbicide Operations in Southeast Asia, July 1961–June 1967* (Project Contemporary Historical Evaluation of Combat Operations Report [CHECO]. HQ PACAF, Directorate Tactical Evaluation). Springfield, VA: National Technical Information Service.

Craig, D. A. 1975. *Use of Herbicides in Southeast Asia. Historical Report*. Kelly Air Force Base, TX: San Antonio Air Logistics Center, Directorate of Energy Management.

CRHEVVEH (Committee to Review the Health Effects in Vietnam Veterans of Exposure to Herbicides). 2014. *Veterans and Agent Orange*. Washington, DC: National Academies Press.

Devlin, Mike. 1981. *Ranch Hand History Project*. Experiences in Operation Ranch Hand, Vietnam. 28 October 1981, Box 04, Folder 06, Paul Cecil Collection, Vietnam Center & Sam Johnson Vietnam Archive, Texas Tech University. Accessed May 27, 2020. https://www.vietnam.ttu.edu/virtualarchive/items.php?item=2520406010.

Dornbusch, Sanford M. 1955. "The Military Academy as an Assimilating Institution." *Social Forces* 33 (4): 316–21. https://doi.org/10.2307/2573000.

Eggleton, A., and N. Thompson. 1961. "Loss of Fluorescent Particles in Atmospheric Diffusion Experiments by Comparison with Radioxenon Tracer." *Nature*, December 9, 1961. https://www.nature.com/articles/192935a0.

Endicott, Stephen, and Edward Hagerman. 1998. *The United States and Biological Warfare: Secrets from the Early Cold War and Korea*. Bloomington: Indiana University Press.

Evans, Rob. 1999. "Germ War Cloud Floated over Shire Counties; Area from Yeovil to Guildford Secretly Sprayed in 1950s as Porton Down Tried to Counter Feared Soviet Biological Attack in Cold War." *Guardian*, November 2, 1999. https://www.theguardian.com/uk/1999/nov/02/freedomofinformation.politics.

Extoxnet (The Extension Toxicology Network). 1993. "Malathion." Accessed May 27, 2020. http://extoxnet.orst.edu/pips/malathio.htm.

Foucault, Michel. (1977) 2007. *Security, Territory, Population: Lectures at the College de France 1977–1978*. New York: Picador.

———. (1979) 1995. *Discipline & Punish: The Birth of the Prison*. Translated by Alan Sheridan. New York: Random House.

Gazette and Herald. 2002. "Germ Warfare on the Streets." April 23, 2002. https://www.gazetteandherald.co.uk/news/7352246.germ-warfare-on-the-streets.

Guillemin, Jeanne. 2005. *Biological Weapons: From the Invention of State-Sponsored Programs to Contemporary Bioterrorism*. New York: Columbia University Press.

Haulman, Daniel L. n.d. "Operation Fly Swatter." *Air Mobility Command Museum*, Accessed January 26, 2020. https://amcmuseum.org/history/operation-fly-swatter/.

Hodgin, John. 2003. Interview by Richard Burks Verrone. *The Sam Johnson Vietnam Archive—Oral History Project*. Texas Tech University. Accessed February 20, 2020. https://vva.vietnam.ttu.edu/repositories/2/digital_objects/69036.

Humphrey, D. "Porton Down in Toxic Spray Probe." *Western Daily Press*, November 3, 1999.

Hundman, Eric, and Sarah E. Parkinson. 2019. "Rogues, Degenerates, and Heroes: Disobedience as Politics in Military Organizations." *European Journal of International Relations* 25 (3): 645–71. https://doi.org/10.1177/1354066118823891.

Institute of Medicine US Committee on Blue Water Navy Vietnam Veterans and Agent Orange Exposure. 2011. *Blue Water Navy Vietnam Veterans and Agent Orange Exposure.* Washington, DC: National Academies Press. Accessed March 15, 2020. https://www.ncbi.nlm.nih.gov/books/NBK209597.

Katz, Fred Emil. 1993. *Ordinary People and Extraordinary Evil: A Report on the Beguilings of Evil.* Albany: State University of New York Press.

———. 2004. *Confronting Evil: Two Journeys*. Albany: State University of New York Press.

———. 2016. *Immediacy: Our Ways of Coping in Everyday Life*. Bloomington, IN: Author House Books.

Kelman, Herbert, and V. Lee Hamilton. 1989. *Crimes of Obedience: Toward a Social Psychology of Authority and Responsibility*. New Haven, CT: Yale University Press.

Lavallard, Marie-Helene. n.d. *A Chemical War without End: Agent Orange in Vietnam*. Accessed March 17, 2020. http://www.nga-orange.org/IMG/pdf/a_chemical_war_without_end-3_1_.pdf.

LeRoy, George, John H. Rusk, and Robert J. Hasterlik. 1966. "The Consequences of Ingestion by Man of Real and Simulated Fallout." *Health Physics* 12 (4): 449–473. https://doi.org/10.1097/00004032-196604000-00001.

Martino-Taylor, Lisa. 2018. *Behind the Fog: How the U.S. Cold War Radiological Weapons Program Exposed Innocent Americans*. New York: Routledge Press.

Mendham, Luke. 2002. "Chemical Tests Carried Out in West; Secret from 1960s Is Revealed." *Western Daily Press,* September 16, 2002.

Miller, D. 1957. *History of Air Force Participation in the Biological Warfare Program 1944–1954*, 72. Vol. 2. Dayton, OH: U.S. Air Force Air Material Command, Historical Division, Wright-Patterson Air Force Base.

Moyes, Jonathan. 2005. "Black Death Was Kept Secret." UK Newsquest Regional Press. September 29, 2005.

Neilands, J. B., Gordon H. Orians, E. W. Pfeiffer, Alje Vennema, and Arthur H. Westing. 1972. *Harvest of Death: Chemical Warfare in Vietnam and Cambodia*. New York: Free Press.

Sawyer, Jon, and William Allen. 1994. "Army Duped City Officials in '53 Experiment." *St. Louis Post-Dispatch*, July 13, 1994.

Schecter, A. 2012. *Dioxins and Health: Including Other Persistent Organic Pollutants and Endocrine Disruptors.* Hoboken, NJ: Wiley.

Stockholm International Peace Research Institute. 1971. *The Problem of Chemical and Biological Warfare: A Study of the Historical, Technical, Military, Legal and Political Aspects of CBW, and Possible Disarmament Measures.* New York: Humanities Press.

Stellman, Jeanne Mager, and Steven Stellman. 2011. *Agent Orange Data Warehouse*. New York: Columbia University. www.workerveteranhealth.org/milherbs/new/.

Stellman, Jeanne Mager, Steven D. Stellman, Richard Christian, Tracy Weber, and Carrie Tomasallo. 2003. "The Extent and Patterns of Usage of Agent Orange and Other Herbicides in Vietnam." *Nature* 422: 681–687. https://doi.org/10.1038/nature01537.

Stevenson, Robert J. 1990. "The Officer-Enlisted Distinction and Patterns of Organizational Reaction to Social Deviance in the U.S. Military." *Social Forces* 68 (4): 1191–1209. https://doi.org/10.1093/sf/68.4.1191.

UK Newsquest Regional Press. 2002. "Pentagon Reveals Nerve Agent Tests on Porton Land." October 23, 2002.

United Press International. 1981. "Chemical Warfare Tests by Army Are Disclosed." *New York Times*, March 19, 1981.

United States Army. 1977. *U.S. Army Activity in the U.S. Biological Warfare Programs*. Vol. 1. Arlington, VA: Department of the Army, United States of America. Accessed February 24, 2020. https://archive.org/stream/U.SArmyActivityInTheU.S.BiologicalWarfarePrograms/RNCBW_USABWP_djvu.txt. Paper presented at the U.S. Senate, 95th Congress, First Session, Washington, DC, March 8 and May 23, 1977.

United States Agency for Toxic Substances and Disease Registry. 2003. *Public Health Statement for Malathion*. Atlanta, GA: USATSDR. https://www.atsdr.cdc.gov/PHS/PHS.asp?id=520&tid=92.

USDAAF (United States Department of the Army and the Air Force). 1958. *Guide to Chemical and Gas Warfare-Technical Manual No. 3-200.* Washington, DC: USDAAF.

United States General Accounting Office. 1993. *Nuclear Health and Safety: Examples of Post World War II Radiation Releases at US Nuclear Sites* (Fact Sheet for the Chairman, Committee on Governmental Affairs, U.S. Senate). Washington, DC: United States General Accounting Office.

Webb, S. 2000. "Revealed." *UK Newsquest Regional Press—This Is Wiltshire*, November 8, 2000.

Western Daily Press. 2005. "The Day Porton Down Unleashed Plague Cloud on to a Fishing Trawler." September 23, 2005.

Westing, A. H. 1976. *Ecological Consequences of the Second Indochina War*. Stockholm, Sweden: Stockholm International Peace Research Institute, Almgrist and Wiksel International.

Whitcomb, Darrell. 2008. "Farm Gate." *Air Force Magazine*, December 1, 2005. https://www.airforcemag.com/article/1205farmgate.

WHO (World Health Organization). 1970. *Health Aspects of Chemical and Biological Weapons: Report of a WHO Group of Consultants*. Geneva: WHO.

ABOUT THE AUTHOR

Lisa Martino-Taylor, PhD: Assistant Professor, Sociology Department, Southern Illinois University Edwardsville, Edwardsville, IL, USA

The International Journal of Interdisciplinary Civic and Political Studies is one of four thematically focused journals that support the Interdisciplinary Social Sciences Research Network. The Research Network is comprised of a journal collection, book imprint, conference, and online community.

The journal presents studies that exemplify the disciplinary and interdisciplinary practices of the social sciences. As well as articles of a traditional scholarly type, this journal invites case studies that take the form of presentations of practice—including documentation of socially engaged practices and exegeses analyzing the effects of those practices.

The International Journal of Interdisciplinary Civic and Political Studies is a peer-reviewed, scholarly journal.

ISSN 2327-0071