

Dirty Work and Deadly Agents: A (Dis)Embodied Weapons Treaty and the Illusion of Safety

Monica J. Casper and Lisa Jean Moore

We recently called for a new “ocular ethic” for making sense of the relationship between visibility and invisibility of human bodies in the twenty-first century (Casper and Moore 2009). Drawing on six diverse but interrelated case studies ranging from infant mortality to HIV/AIDS in Africa to Lance Armstrong’s testicular cancer, in *Missing Bodies* we ethnographically mapped the processes by which we see or do not see certain bodies and what this “witnessing” has to do with power and the politics of gender, race, class, sexuality, citizenship, age, and geography. We have begun to employ our theoretical/methodological project to investigate new sites where (in)visibility matters. Committed to feminist and sociological methods, our critical attention to visibility and the ocular ethic is based on empirical research and is deeply attentive to social structures.

We focus our analytical lens here on connections between national security, arms control, and the shifting gender politics of laboring bodies. We are specifically interested in how an international treaty, the Chemical Weapons Convention (CWC), reflects a strategic rationality aimed at eliminating deadly weapons but uses the abstract language of states with very little textual reference to human bodies (see also Dawes 1999). And yet implementation of the CWC, as we show, relies on, among other things, the invisible work of men at hazardous disposal sites. What does it mean, we ask, when ideals of global security and safety are achieved by risking some bodies for the sake of others? Who can be (made) safe in a world with chemical weapons, even as these noxious munitions are being slowly eradicated? Will obliteration of chemical weapons make everybody safe and secure, as the treaty’s architects seem to imply? And how do global treaties and the domestic practices they instigate both reveal and

extend structural inequalities? We show that safety and risk operate in juxtaposition, such that concepts as broad and vague as “homeland security” may mean safety for some but only at the expense of others.

Inspired by Foucault (1979/2010) and contemporary scholars of biosecurity and human security (e.g., Collier, Lakoff, and Rabinow 2004; Berman 2007), we interrogate the (dis)embodied qualities of the CWC. We reveal it principally, and perhaps unsurprisingly, as an instrument of governmentality in the service of global arms control. That is, through the CWC policy makers seek to produce secure—but not inevitably *safe*—global subjects who will adhere to and ostensibly benefit from some version of peace; of course, this works only if certain people are subjected to bodily risks in the name of security. Ideals of security, then, do not necessarily translate into safety for all human beings. Indeed, by bringing workers into our analytical frame, by making them visible, we illustrate how embodied labor facilitates success of the CWC and its policy goals. In short, the collision of disembodied rationality with lived experiences represents a hierarchy of abstract goals over situated practices. The lofty ideals and rhetoric of security trump the practical realities of community relations; basic human safety in the workplace; and the needs and rights of citizens to live in clean, safe environments.

In what follows, we investigate and interpret the ways in which human bodies are simultaneously erased in bureaucratic governmental treaties and used in the nitty-gritty of executing the treaty’s provisions. After providing a historical overview of chemical weapons in the United States, we describe our fieldwork and data-gathering strategies. Moving through our analysis of the consequences of creating a treaty without specific consideration of and engagement with human bodies, we then examine our ethnographic data to interpret how men actually work in chemical weapons disposal and what this means in terms of masculinity and security practices. We conclude with observations about the broader implications of “safety” as both ideology and practice and how this relates to governmentality and arms control, rhetorics of national/global security, and the dangerous work of human bodies.

Brief History of Chemical Weapons in the United States

Alarming enough on their own, taken together the words “chemical” and “weapons” can strike terror into people’s hearts, and with good reason.

Who of a certain age has not seen chilling World War I and II photos, and more recently digital footage from Iraq and Afghanistan, of figures in gas masks stumbling blindly through a gloomy haze? In the United States, chemical weapons lurk in our collective imagination and have done so especially since the horrific events and aftermath of 9/11. A kind of techno-ghoul, chemical weapons are perceived as ready to strike an anxious and exposed public at any moment. Despite the extraordinary odds against ordinary people being assaulted with chemical weapons—we have a better chance of being eaten by polar bears—they are often framed as ubiquitous and frighteningly seductive. Consider, for example, their portrayal in popular films such as *Three Kings* and *The Rock* and television series such as *24*, where they serve profitable entertainment purposes. There is a kind of “taboo” (Price 1997) attached to chemical weapons that renders them both mysterious and alluring.

A chemical weapon is defined as any armament (e.g., bomb, cartridge, projectile, missile, mine, rocket, grenade, or spray tank) that contains a lethal chemical agent. In the *First Responder Chem-Bio Handbook* (Venzke 1998), a “practical manual” for use in the field, chemical agents are grouped into five categories: nerve, blister, choking, blood, and vomiting. Each agent has a specific toxicology and symptomology and requires precise safeguards to avoid exposure. Each also necessitates unique clinical strategies for managing and treating exposed individuals. Nerve agents, such as VX and sarin/GB, affect the central nervous system, for example, leading to sweating, urination, diarrhea, nausea, gasping, seizures, and death. Blister agents, such as mustard and lewisite, result most obviously in blisters, but also in corneal damage, loss of voice, cough, fever, nausea, vomiting, diarrhea, compromised immune response, and death. Choking agents, such as phosgene and chlorine, lead to coughing, choking, dizziness, hypoxia, hypotension, and death. Hydrogen cyanide and other blood agents cause nausea, dizziness, vomiting, and death, while vomiting agents cause irritation of membranes, coughing, headache, nausea, and of course vomiting. Protection from harm ranges from masks and other personal protective equipment, to avoidance, to immediate decontamination after any exposure.

The United States researched, produced, and stored millions of chemical weapons during World War I, using some of these in combat. The most widely deployed chemical weapon until the 1940s was mustard gas, but sarin, VX, BZ, lewisite, and others quickly followed. Adding these

toxins to munitions was intended to enable rapid death or destruction of an opposing army. In combat, disabled soldiers requiring medical treatment and triage can be more troublesome for armies than can dead bodies, so debilitating sickness is sometimes preferable to death as a strategic military aim. Yet chemical weapons, so promising in theory, proved difficult to use in practice; for example, on windy days airborne agents could be blown back upon the troops that had released them. Chemical weapons instead became valued for their professed *symbolic* power as a deterrent (Tucker 2007). Prevalent thinking in the post–World War II era was that the United States would not be attacked with chemical or biological weapons, or indeed nuclear weapons, if the country had its own arsenal to deploy.

Ironically, despite their infrequent use, chemical weapons production increased dramatically in the United States during the Cold War. Weapons were stockpiled at facilities across the country and in colonial outposts such as Johnston Island in the South Pacific, under management by the army and civilian defense contractors. Production of most chemical weapons in the United States ceased in 1968, when the army began disposing of its outmoded and aging stockpile via deep-ocean dumping, land burial, and open-pit burning. Increased environmental awareness led to restrictions on these methods and the army researched other disposal strategies. In 1982, incineration was selected with minimal public input as the preferred or “baseline” chemical weapons disposal technology. Efforts to eradicate chemical weapons were stepped up after 1993, when 176 countries, including the United States, signed a multilateral treaty: the CWC. This convention came into force in 1997, when sixty-five states ratified it, and by early 2008 it had 183 member states (those which had ratified or acceded to the treaty) as signatories, representing 98 percent of the global population and landmass (Bothe, Ronzitti, and Rosas 1998). As of this writing, there are 188 member states; the only states not party to the CWC are Burma, Israel, Angola, North Korea, Egypt, Somalia, and Syria.

Since then, chemical weapons have become embroiled in the global and domestic biopolitics of war, security, and terror and their cultural representations. In the United States, public concern about chemical weapons and other lethal agents swelled after 9/11, contributing to a major expansion of the home and personal security industry. Sales of protection devices such as gas masks increased, and these products were offered by web-based marketers such as SaferAmerica.com and AreYouPrepared.

com, whose names blatantly capitalized on public fears of chemical and biological attacks. Americans' distress intensified in 2003, when the Bush administration reported the presence of weapons of mass destruction (WMDs), specifically five hundred chemical weapons, in Iraq. The discovery, later revealed as fictitious (see, e.g., Cirincione, Mathews, and Perkovich 2004), served as a key justification for commencing war against Iraq.

Ethnographers in the Mist

Well before 9/11 and the Second Gulf War, one of us began a multi-sited ethnographic project examining global and local politics of chemical weapons disposal. Interested in relationships of health, risk, security, technologies, environments, and bodies, Casper designed a qualitative study that attempted to answer the following questions: What happens when an international treaty, forged in the marble halls of diplomacy and signed in Paris, is implemented in US local communities, each with its own cultural and geographic particularities? What sociological issues pertain to an issue typically considered in technical, economic, or geopolitical terms? And how might disposal of chemical weapons illuminate gender and racial dynamics, environmental justice struggles, and health politics?

Chemical weapons disposal was perceived as intensely threatening to communities and bodies (Casper 2003). Indeed, incineration and its byproducts pose myriad health problems, which may be amplified when the materials incinerated are themselves toxic. In addition to deadly nerve agents, other suspect materials produced through incineration of chemical weapons are dioxins, furans, and at least forty-eight organic substances, including original chemical agents and chemicals produced from incomplete combustion (Crone 1992). While risks of some substances are known, others have not been studied at all for effects on human and ecosystem health. During incineration, all these agents may be released into the air through either *direct exposure pathways*, which include releases out of furnace smokestacks, or through *indirect exposure pathways*, in which materials are deposited onto the ground and travel into bodies through different media (water, soil, food). Once they are introduced into humans, bodily functions may be severely disordered.

In 1998, Casper traveled to Tooele, Utah, to visit a chemical weapons disposal facility known as the Tooele Chemical Agent Disposal Facility, and to interview informants both inside the plant and in the community.

In 2000, she spent two weeks on Johnston Island, located in the Pacific Ocean between Hawaii and the Marshall Islands. There she researched the prototype incinerator known as the Johnston Atoll Chemical Agent Disposal System (now defunct) and interviewed the island's residents, more than two-thirds men, who were a lively *mélange* of military personnel, civilian defense contractors, indigenous people from the Pacific Islands, and support staff. Research at both sites required innovative methods alongside the usual ethnographic skills: Casper was required to carry a gas mask into each facility along with syringes of atropine, an alkaloid derived from belladonna (a nightshade plant) that counteracts the effects of nerve gas. These protective technologies were necessary in the event of accidental exposure, and she found the experience of being a body "under siege" both worrisome and oddly exhilarating. Yet when Casper gave birth to her first daughter in 2001, shortly after 9/11, the gruesome corporeal realities of chemical weapons hit home and "ethnography at the edge" came up the loser.¹ Disappointed, Casper hung up her gas mask and considered alternative ways to explore the compelling issues raised by chemical weapons disposal in the context of reconfigured national security practices.

Risking only paper cuts and eyestrain, she and collaborator Moore began investigating government, nongovernmental organizations, and media documents related to weapons disposal, including analyzing the Chemical Weapons Convention itself as a technology in the Foucauldian sense. The account presented here is based on this new research as well as on ethnographic data collected through 2000. In what follows, we explain how the technical, dry details of the CWC are, unsurprisingly, steeped in the language of international relations and strategic government, and not in the messy, material, lived realities of human bodies at risk. While this may be emblematic of many policy and legal documents (see Dawes 1999), we are curious about why an arms control agreement focused on making people more safe and secure would elide actual human bodies. With few exceptions, the document and most analyses of it disregard embodiment, including the bodies of concerned citizens near chemical weapons facilities and the bodies of workers. Our analysis exposes these discursive erasures as markers of structural inequality, and we narrate an alternative—and more humanistic—story about chemical weapons and security, one in which human bodies and gendered risks to them are foregrounded. Security and safety, we show, are not simply two sides of the same coin.

An Arms Control Treaty Without Bodies

The CWC is, by most measures, a major step toward nonproliferation. As of November 2007, of the approximately seventy-one thousand metric tons of chemical agent declared by six member states, some twenty-six thousand metric tons had been destroyed. Almost 3 million munitions and containers out of almost 8.7 million declared had been destroyed. And of the sixty-five chemical weapons production facilities declared by twelve member states, forty-two had been deliberately destroyed (see Organisation for the Prohibition of Chemical Weapons, <http://www.opcw.org/chemical-weapons-convention/>). Some countries, such as Albania and Canada, that had relatively small stockpiles successfully implemented the CWC early, while Russia, for example, has had tremendous difficulties. Indeed, in August 2010, Russia announced that its disposal of chemical weapons would be delayed by two to three years beyond the 2012 deadline (Associated Press 2010). And the CWC, like many such governmental projects, has been beset by logistical problems of working across nations, both within member states with their own internal politics (Tucker 2007) and at the Organisation for the Prohibition of Chemical Weapons (OPCW), the transnational agency whose development was specified by the terms of the CWC.

We are particularly interested in the very minimal references in the CWC to bodies, exposure, and health. If chemical weapons are being abolished because of their short- and long-term effects on human bodies and lives, then why is this quest for embodied safety not specified directly in the treaty? While some language in the CWC evokes threats to human health and well-being, this highly technical document focuses in toto on chemical munitions and the political infrastructures required to eliminate them. Risks to health from chemical weapons are discursively taken for granted while the document serves other strategic purposes, most specifically the shifting project of “international relations” writ large. As Buzan and Hansen (2009) point out, a key question in international security studies is the degree to which practices of security are “inextricably tied to a dynamic of threats, dangers and urgency” (10)—and, we would add, bodies.

Other than the phrase “for the sake of all mankind” in the CWC’s preamble, which is generic and resembles that of many other treaties, physiological threats to humans are only thinly implied (see United States

Chemical Weapons Convention, <http://www.cwc.gov/cwc.html>). First, in Article II (Definitions and Criteria), a toxic chemical is defined as “any chemical through which its chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals.” At a basic level, then, the treaty’s architects note that chemical weapons can be debilitating or lethal. Second, in Article IV, the CWC mandates that destruction of chemical weapons must ensure both the safety of people and protection of the environment. Hence, open-pit burning, land burial, and ocean dumping are expressly prohibited, given the environmental damage and potential health risks they pose. In this section of the treaty, the safety of people is included alongside environmental protection, suggesting that the focus is not bodies *per se*; the environment serves rhetorically as a screen through which to view human health and safety. These minimal references to health and safety are the *only* such “embodied” text in the *entire* treaty.

If we move beyond the treaty and look to OPCW itself, the coordinating agency whose establishment was mandated by Article VIII, we find in-depth discussion of health risks. In a section of the OPCW Internet site titled “Protecting Each Other,” one finds “Chemical weapons are frightening and dreadful weapons. They inflict *excruciating* and *long-term suffering* on a *mass scale*” (emphasis added) (See Organisation for the Prohibition of Chemical Weapons, <http://www.opcw.org/>). Here is a description of personal safety in the kind of visceral language not remotely hinted at in the treaty itself. The OPCW describes itself on its site as “the fastest growing disarmament organization in history”—an enactment of security. Now more than a decade old, OPCW is “a modern, democratic, global organization,” whose existence owes as much to the politics of foreign relations as it does to the lethality of chemical weapons.

Moreover, in an invitation to nonmember states (of which there are very few remaining, as noted earlier) to join OPCW, the organization self-identifies as “one of the cornerstones of the international security architecture of the 21st century, providing a multilateral co-operative mechanism devoted to disarmament, non-proliferation, and assistance to victims of chemical weapons use. Its primary objective is the elimination of chemical weapons . . . an important step towards the creation of a healthier world.” So health, and by extension bodies, are mentioned briefly here by OPCW in a call for the CWC’s universality. While we certainly do not dispute the claim that the world would be better off without chemical weapons, it is

unclear if health is defined by OPCW as exposure and risk to human bodies, or in terms of international security and the overall economic health and stability of nation states. Where do human bodies end and states begin in official documents such as that of the CWC? Are safety and security both possible in the execution of a global treaty? And if so, then why has implementation of the CWC become so contentious, especially in the United States, specifically regarding safety issues?

In short, from OPCW we learn that the CWC is primarily about the relations between nations, and not *really* about the impact of chemical weapons on human bodies: “Adherence to the Chemical Weapons Convention demonstrates a state’s commitment to disarmament and international co-operation, and helps to reinforce its position in the mainstream of international politics. It builds confidence and transparency in security-related policies at regional and international levels. By embracing international norms of behaviour, the State Parties create a conducive atmosphere for bilateral and multilateral co-operation and interaction in the field of disarmament and security.” There is no mention of the health and safety of human bodies in this section of the treaty. We also learn that states not party to the agreement “are missing opportunities to influence the course of events in relation to chemical weapons disarmament, and—more importantly for those who do not have such weapons—fostering international co-operation in the peaceful use of chemistry and in chemical industry” (see Organisation for the Prohibition of Chemical Weapons, <http://www.opcw.org/chemical-weapons-convention/>).

Lethal Exclusions and Dubious Exceptions

The CWC bans chemical weapons, but there are notable exceptions that call into question the logic of the agreement itself and lay bare the consequences of neglecting human bodies and health. For example, the treaty affects industry, but not punitively. That is, as a *weapons* treaty the CWC monitors only weaponized or potentially weaponized chemicals—it does not intervene in “legitimate” uses of industrial chemicals that may nonetheless be injurious to human bodies and health. These chemicals can be made up of the same elements as chemical weapons but put to different uses; however, deleterious effects on bodies may be the same. Architects of the treaty and those who implement it within member states (e.g., the US Chemical Materials Agency, created in 2003) have endeavored to work

with the chemical industry on behalf of free trade and economic growth. Neoliberalism meets nonproliferation.

Because the treaty attempts to strike a balance between promotion of free trade (see the preamble) and its stated commitment to eradicating weapons, the document categorizes chemicals into schedules based on levels of risk. Schedule 1 chemicals include those developed or used as chemical weapons or immediate precursor compounds, such as saxitoxin, ricin, and mustard. States can develop and export these only to other state members of the OPCW, but advance notification and annual declarations are required. Re-export is prohibited. Schedule 2 chemicals pose “a significant risk to the object and purpose of the Convention” but may have “legitimate” uses and are traded in mixtures or formulations. We note that the risk outlined here is to the CWC’s aims and *not* to human bodies. These chemicals (e.g., dimethyl methylphosphonate, thioglycol, arsenic trichloride, and methyl phosphonic acid) can be exported or imported to or from state parties only. Schedule 3 chemicals pose some risk to the CWC’s nonproliferation purposes (again, not framed in terms of human bodies), but these substances are usually manufactured in large quantities for “legitimate commercial purposes.” Including pesticides, pharmaceuticals, toiletries, resins, plastics, urethanes, acrylics, and surfactants, these chemicals—the stuff of daily life—may be traded between state parties and can also be exported to non-member states if an end use certificate is issued.

Another exception is tear gas, a chemical weapon long used for riot control. The *New York Times* reported in December 2007 that US Border Patrol officers, in their efforts to secure the country’s contentious southern border, were “increasingly firing pepper-spray canisters and tear gas from American territory into the ramshackle neighborhood of Tijuana, Mexico, that abuts the border with San Diego, Calif.” (Lyons 2007). Agents had previously used standard firearms, sometimes causing fatalities, against smugglers who threw rocks and debris at them. Use of tear gas was meant to minimize fatal injuries. But “the locals complain that the pepper spray and tear gas is saturating whole residential areas, affecting innocent people and endangering children, and that they sometimes have to flee their homes to get away from it” (Lyons 2007). It is easy to imagine an outraged US response if the Mexican government began to lob canisters of tear gas into San Diego. In the war on drugs and Mexican immigrants, “domestic” use of tear gas cannot be contained inside geopolitical borders. Indeed, the CWC specifically exempts tear gas used by states in the service of controlling “unruly” citizens (and noncitizens).

The strange and convoluted tale of white phosphorous, known colloquially as “Willy Pete,” also reveals the state’s disembodied view of chemical weapons. According to the Agency for Toxic Substances and Disease Registry, synthetic white phosphorous is a white, yellow, or colorless waxy solid that smells like garlic. It reacts rapidly with oxygen and is pyrophoric—it can easily catch fire—at ten to fifteen degrees above room temperature. The US military uses white phosphorous in ammunition to produce smoke for concealing troop movements and bright flashes for identifying targets. The chemical has been insufficiently investigated as a toxic substance, although studies of workers who have come into contact with it show that it causes coughing and irritation of the throat and lungs. Eating or drinking even small amounts can cause liver, heart, or kidney damage; stomach cramps; drowsiness; and death. Burns may result from skin contact (<http://emedicine.medscape.com/article/833585-overview>).

The use of white phosphorous against *military* targets is neither prohibited nor restricted by the CWC, or by any treaty to which the United States is a signatory. The 1980 UN Convention on Certain Conventional Weapons expressly prohibits the use of incendiary weapons against *civilian* targets. Yet in November 2004, white phosphorous entered the war in Iraq, when troops allegedly used it against military targets and civilians in a densely populated area in the Battle of Fallujah (Reynolds 2005). An Italian documentary reported that the American military had engaged in what troops call “shake and bake” (Ranucci and Torrealta 2005). That is, instead of white phosphorous being used merely to obscure or illuminate, shells were fired *directly* at insurgents’ hiding places, driving them into the open, where they could then be assaulted with high-explosive devices. These weapons, however, also reportedly struck noncombatant men, women, and children, killing many.

More than ten thousand troops were involved in the assault on Fallujah, a city of some three hundred thousand before the war and one in which approximately fifty thousand civilians remained at the time of the battle. CNN reported, “US tanks fired 120-mm rounds into booby-trapped barricades for about an hour, igniting massive explosions. . . . Military officials say 3,000 to 5,000 insurgents may be inside the city—difficult terrain for urban warfare—but they acknowledge many may have slipped away amid widespread reports that an offensive was coming” (<http://premium.edition.cnn.com/2004/WORLD/meast/11/08/iraq.main/index.html>).

One human rights activist recounted that “a rain of fire fell on the city,” and numerous reports profiled civilians who were burned by “a substance that melted their skin” (Popham 2005). The Pentagon hotly denied allegations of white phosphorous use, while also reminding journalists who raised questions that its use against military targets is legal and that “extraordinary” efforts were made to protect civilians. The Pentagon did not specify the nature of these efforts.

Why was this obviously dangerous and harmful weapon not included in the CWC? According to Peter Kaiser, a spokesman for OPCW, the burns caused by white phosphorous are “thermic rather than chemical and as such not prohibited by the treaty” (Reynolds 2005). In other words, the *heat* produced by the chemical, rather than the chemical itself, is the problem, and as such enables white phosphorous to slip between procedural cracks in the treaty. Willy Pete’s use, then, hinges on a *technical* distinction: some stakeholders prevaricate about the chemical specificities of various substances, rather than focusing on their actual use and bodily consequences in military practice.² By definition, white phosphorous is a weapon derived from chemicals, but the context of its use, the rules of war, allow it to be excluded from the CWC. If bodies were the principal focus of the treaty—that is, bodies harmed by chemicals regardless of who lobs these substances and for what purposes—then Willy Pete would likely be eliminated, too.

This discrepancy, like the others noted, suggests that states, militaries, and nongovernmental organizations recognize rational, legal ways of chemically injuring and killing people when circumstances permit. That the CWC contains such exceptions, a fact not in itself startling, lends support to our claim that treaties serve rhetorical and strategic purposes beyond their avowed technical and political aims. In this case, the broad reification of security through the CWC and ongoing chemical weapons eradication does not prevent danger and harm to human beings through other chemical agents, such as tear gas and Willy Pete. These exceptions clearly show that some bodies are placed at risk—their safety, health, and even lives sacrificed—in the name of an abstract universal security.

We turn next to an important aspect of local settings in the United States in which the CWC is implemented: workers at disposal facilities. We explore ways in which the global ban can be understood and acted upon only in contexts that are deeply embodied. Neither occupational health issues related to workers, nor environmental justice concerns of

local citizens, were addressed by framers of the CWC (Casper 2003). In attending primarily to arms control aspects and geopolitical arrangements of strategy and technique, as we have illustrated above, the treaty has failed to account for the embodiment of those who are closest to the actual chemical weapons: the people who work on and around them and the citizens who live in neighborhoods where facilities are located.

Danger: Men At Work

Since the mid-1990s, considerable time, effort, and money have been invested in chemical weapons disposal, predominantly incineration. Facilities have been constructed at various stockpile sites in many countries, while at other sites plans are under way to build additional costly incinerators. To burn chemical weapons in the United States, the army and defense contractors must manually transport munitions from storage areas, typically bunkers. These are perilous maneuvers because workers handle and move aging, unstable, and deadly weapons, many with leaking chemicals. Once inside the incinerator, workers disassemble munitions, separating explosives from liquids, and then begin the automated process through which chemical agents and bulk containers are incinerated. Four separate furnace systems are required to carry out these activities. The facilities must manage and transport waste materials, including atmospheric releases and solid waste, after incineration. Chemical weapons disposal has generated millions of pounds of toxic waste; for every pound of chemical agent destroyed, fifteen pounds of waste are produced. This led some observers in our ethnographic study to critically categorize this activity as chemical weapons *dispersal* rather than disposal, a consequential distinction for those who handle chemical agents.

At the outset of this project, we wondered how many children in the United States wake up one day and declare, "I'm going to grow up and burn chemical weapons for a living." Our guess is, not many. But certainly there are children, especially boys, who imagine a future life of American manhood involving dicey, exciting, potentially fatal work: police officer, firefighter, pilot, deep-sea diver, navy SEAL, spy. Their imagined manhood is inextricably tied to their career goals, however vaguely defined. Yet all too often, children from structurally disadvantaged groups grow into dangerous work not because they hope for it, but because their options are constrained. Unsafe industries such as coal mining, hazardous-waste dis-

posal, and steelwork, for example, are peopled with laborers who may not have had abundant choices. The military, too, has long been a destination for lower-income young people seeking training and a college education. For many people in “blue collar” industries, work and economic provision are deeply connected to masculinity. Such work, whether done by men or women, is the performance of masculinity in social context—and it is increasingly complex and embattled with the rise of a service economy (Faludi 2000).

We suggest that obdurate arrangements of the people in society who engage in what sociologist Everett Hughes (1962) called “dirty work” have much to do with social status, relative risk, and norms. The labor of dirty work reinforces traditional gender roles and dirty work itself can be gendered. For example, cleaning human waste is based on a gendered division of dirty labor: changing dirty diapers (women) versus cleaning up human debris at ground zero (men). Whose bodies, we ask, constitute acceptable grist for the mill in various occupational settings? Overwhelmingly, the people who do hazardous work in chemical weapons facilities have been civilian men. (Military men and women are engaged in a different kind of work, that of protecting the munitions and facilities.) These laboring men are doing very dirty work, and like some coal miners and steelworkers and other blue-collar employees, they are relatively well compensated for it. Moreover, we found that the dirty work of cleaning up chemical weapons and maintaining incinerators and their parts supports the reproductive work of wives and girlfriends back home, who are contributing to gendered divisions of labor through bearing and raising children.

Consider Reed, a Raytheon employee who worked on Johnston Island in chemical weapons disposal. An affable young southern white man, he had previously worked in the hazardous-waste industry. He saw in chemical weapons disposal a chance to earn a large income to help support his wife and young son: “I was a control room operator for a company that used to do contaminated-soil incineration. . . . I’ve worked in the hazardous-waste industry, and a lot of the chemicals that we worked with in the past were either components of chemical weapons or building blocks of chemical weapons, or mixed. . . . I didn’t necessarily work with nerve gas, but I did work with a constituent here and a constituent there. And I worked with stuff that, you know, you could do like that [punching sound] and it would explode. Carbon disulfide.”

The bulk of Reed’s job, for which he was paid about ninety thousand

dollars annually, required being sealed into a demilitarization protective ensemble—essentially an unventilated polyvinyl chloride (PVC) space-suitlike contraption connected to an air supply via a hose—and entering into contaminated areas to fix machinery or clean up spills of VX and other chemical agents. Reed described the work as “interesting and different,” but also as treacherous—which made it both appealing and “fun.” He partnered with a lanky African American, Gus, with whom he developed a working relationship based on camaraderie and trust. Over drinks one night, they joked with a certain macho élan about “suiting up with a hangover” and then trying to “clean some toxic shit up”—using masculine humor to manage an uncertain workplace. Asked about his family’s view of his work, Reed responded, “When you tell them that you burn chemical weapons for a living, it’s funny the perception people have. I’ve had everything from people thinking that I’m walking out with a mine detector, kicking these things in an open field somewhere, and handling them . . . to, you know, people are thinking that you’re throwing bombs on a bonfire out in the middle of the Pacific.”

And regarding life on the island, Reed noted, “Well, it’s not what everyone pictures, I promise you that. You tell them you work and live on a two-and-a-half-mile by one-half-mile island in the middle of the Pacific Ocean, they get visions of palm trees and flowers and, you know, some lush tropical paradise. And this place is very industrial. It’s not a whole lot of scenery. . . . It’s an island that’s built by the government for the government, here it is, and for what it’s worth.”

The distance from home takes its toll. According to a therapist who worked on Johnston Island, the island had a surplus of relationship difficulties and alcohol problems. Reed estimated “about 70 percent of marriages end out here.” While he was working on Johnston Island, gone for weeks at a time, Reed’s wife had an affair and later became pregnant. A paternity test proved that Reed was the baby’s father, but the ordeal challenged their marriage. Reed eventually left Raytheon, chose to work closer to home, and settled into life as a father of two. When re-interviewed in 2005, he reported being less than fully satisfied with his life, and he missed the amount of money he made on Johnston Island. A message via Facebook in 2010 indicated that Reed had divorced his wife and again changed jobs—evidence that work can affect the safety of marriage, too.

Kevin, a burly Irishman in his midthirties, coordinated hazardous waste on Johnston Island. His job was to monitor and handle “the differ-

ent types of waste generated in the plant, both agent-contaminated waste and also just the regular processed wastes.” His background was different from Reed’s; he had been married for more than a decade and had a young daughter. But like Reed, he appreciated the high salary that enabled his wife to stop working when their daughter was born. His family had recently moved to a larger house in the suburbs on the East Coast. When asked what had brought him to Johnston Island, he replied: “Well, I was in the military for fifteen years before I came out here, and I was in nuclear weapons and bomb disposal. . . . We had more radioactive stuff; we did have some regular hazardous waste. . . . And I worked in a site that looked just like this, with the exact same little gates and all that stuff. . . . I’ll never get away from it.”

This last line is particularly interesting, as Kevin seems to be imputing a certain intractable quality to masculine lines of work. He also offered an interesting comparison between civilian work on Johnston Island, including his job, and the army’s more fleeting personnel responsibilities: “The biggest problem out here is [the soldiers’] turnover, you know, that it’s just a one-year tour for them. So by the time they start to figure out what’s going on with what they’re doing, then they leave and somebody else comes in. . . . Plus, we do it day in and day out, every day, and they don’t. They have their commissions. I mean, this job is our only job. We don’t have to worry about training for somebody attacking the island, you know, cleaning our M16 and all that stuff.”

Kevin was not overly concerned about safety issues at the facility, believing that all the workers did their jobs accordingly and followed the rules. He remarked, “If anything, we probably go overboard on our protective clothing requirements and stuff.” However, he acknowledged that aspects of the work could become routine, even boring, and this posed problems: “I would say that there’s, you know, if you do something long enough, there’s no way that you’re not going to get some sense of complacency.” For Kevin, then, following procedural and technical rules minimized danger.

Compare Kevin’s observations with those of Bradley, who was responsible for issuing protective gear on the island—technologies that served as a material reminder of potential hazards. Brad defined the mandatory gas masks as “a crutch for some people,” commenting that perceptions of risk far outweighed actual risks. Yet he invoked his own faith in technology:

I know what the filter banks can do here. I know the scrubbing systems, okay. My people are down range here. If something happens, I bring them up here, and I do it anyway. . . . But I would not let those people be at risk if I didn't feel like that was 100 percent effective, and it is. I think that we do risk assessments and everything, and we're pushing VX right now, and VX has a volatility of motor oil. And the off-gassing from VX is, I mean, the sun would have to be about 92 million miles closer to that stuff to off-gas and cause you to get sick from it.

The notion of understanding and respecting the capabilities of the chemical agents, but not fearing them, was endemic among men on the island, many of whom recognized the danger and risks but felt these could be controlled and managed through proper procedures, equipment, and the right attitude. Brad remarked:

I've been here a long time and I've seen a lot of stupid things, you know. I was here in 1991 when the plant went hot for the first time. And it was really interesting to see thirty-five or forty people quit, get on that plane and say, "You're going to die." And I'm standing there at the air terminal, "What's this all about?" . . . They were all local Hawaiians. They were so concerned that something was going to happen here that it would take them with it. And, you know, hell, I've been around this stuff, you know, for ten years now, and I respect the hell out of it. I don't have a cavalier attitude about it. I think that, you know, it'll kill you, but I think we do things right.

Another worker, Frank, whose background as a roughneck in the Gulf Coast oil and gas industry led him to Johnston Island almost a decade earlier, said this:

Well, it's like the Indians, you know, back when there were cowboys. You didn't have to be afraid of them, but you respected what they did. It's like [chemical] agent—you respect what it does. You just don't go half-cocked fighting it, but you don't have to be afraid of it because you're trained good enough to understand it. Now I don't know how I would feel if it was like a couple blocks away from my house in the real world because of the way the winds blow. But here, I mean, it's very rarely that it blows anywhere to where it could harm us. And I believe they take a lot of precautions. Sometimes I think they're overprotective.

Bill, a senior manager with training in electrical and industrial engineering, echoed these comments:

Well, actually, mainly because I have some degree of knowledge of chemical weapons, I have very little fear of them, from the standpoint I think nuclear weapons and biological weapons are a greater threat to modern society than chemical weapons are. . . . There's a variety of ways of producing catastrophic results. . . . If I was in battle, would chemical weapons be that much more heinous than having somebody shooting at me with artillery? If I'm going to be dead, I really don't care; you know, it's a kind of dumb way of looking at it, but what makes one method of maiming or killing somebody socially acceptable and other methods not? And I think that's the real issue: How do you develop a society, or bring society to a point that none of these are . . . a socially acceptable use for anyone?

The preceding perspectives all share a reliance on technical knowledge and procedure, masculine appreciation for the lucrative “dirty work” of chemical weapons disposal, and the power of hazardous agents that must be known and respected. The men here also evidence a collective disregard for the fear of contamination, displaying bravado and technical proficiency in the face of danger—especially when sealed into their trusty demilitarization protective ensemble (DPE) suits.

Extending our analysis, we want to suggest an alternative narrative: What kind of gendered story could we tell about the Chemical Weapons Convention if the workers in chemical weapons plants were, instead of the tough guys profiled here, *pregnant women*? Imagine a woman in her third trimester being sealed into a DPE suit, PVC tightly stretched across her large belly, so that she can venture into a confined, polluted space containing the residue of lethal nerve gas. The image is disconcerting, if not downright ridiculous. The disembodied nature of the CWC, delineated earlier, rests on long-standing, invisible assumptions about human bodies and what they do. Namely, the CWC presumes that an army of working-class *men* is perpetually available to implement the treaty, no matter how long it takes. The unexamined labor of men in hazardous workplaces did not need to be articulated in the CWC because it is not exceptional or notable; it is, rather, a taken-for-granted fact—even by workers themselves—of certain kinds of labor. The work embodied in chemical weapons disposal is consistent with occupational norms regarding what we in the United States would call blue-collar masculinity. Men labor, and when they are well paid and living on a remote Pacific island, they do so relatively agreeably—but not without consequences.

If the workers handling deadly agents really were pregnant women, bodies would be more visible and their vulnerabilities more remarked upon. Indeed, the CWC would be compelled to specify how disposal could happen in ways not injurious to women and especially to their precious developing fetuses (see Roth 2003). But because the workers are men, roughnecks and renegades and ex-soldiers, and not feminine incubators for the next generation, their hidden labor is assumed. The labor these men perform is also seamlessly intertwined with the authentication of masculinity and the rhetoric of choice. Most significant, the labor is, we suggest, *built into* the structure of the CWC. It matters little if working-class men (and their sperm; see Moore 2007) are exposed to toxins, because such risks are managed as a necessary fact of life, by the right equipment and a gendered can-do attitude. Policy makers and cleanup crews frame exposure not as an accident waiting to happen or even as an inappropriate by-product of labor, but rather as a rationalized requirement of making the convention work. Working-class men perform dangerous work, in circumstances under which they are not always safe, so that the ideal of security can be achieved and so that they can support their families, a kind of twinned invocation of the “homeland.” Because this does not disrupt the established gendered division of labor, and because it is not in fact pregnant women or other vulnerable fleshy beings handling chemical munitions, the CWC need not include details about whose bodies and health may be harmed by exposure during disposal.

Conclusion: Burn, Baby, Burn

In closing, we want to suggest that to be safe is to be protected from harm or injury, and in our estimation this implies that more powerful others are creating the conditions that encourage safety. Safety is about the individual, often an innocent individual who cannot speak for or protect him- or herself, an individual who might not even consider him- or herself to be at risk or who might be unaware of dangers lurking (Casper and Moore 2009). Security, while conceptually and practically related to safety, as an operation of the biopolitical occurs at the structural and rhetorical levels (Collier, Lakoff, and Rabinow 2004). It is safety carried out for the good of the *social body*, the collective, and not for the vulnerable, innocent, weak, or naive individual. Security operates at the level of the aggregate. It is defined and provided by states (or their proxies, such as private con-

tractors) on behalf of the masses. Security in practice might not actually affect or be beneficial for each individual body, but it is believed to create conditions deemed most favorable to a population's overall "safety." Security involves large-scale processes of social control, whereby safety for the aggregate is not safety for all. Indeed, the most vulnerable people may be the least safe during operations of security, sacrificed to harm, violence, disavowal, or exile to protect the cultural fabric and to maintain extant social hierarchies.

When the US Army decided to dispose of chemical weapons through incineration—a technology regarded with suspicion by environmental activists—it failed to obtain public input prior to construction. The communities in which stockpiles were located were informed that a massive, expensive incinerator, albeit one that provided jobs, would be built in their backyards. Perhaps because the prototype facility was erected on a small wildlife preserve in the middle of the Pacific Ocean, the army felt that people in the shadow of the smokestacks (well-paid employees, support personnel, and troops) would little mind. Soldier-bureaucrats at the Pentagon and policy makers charged with fulfilling obligations of the CWC did not anticipate public concern about disposal, including negative reactions from citizens of Pacific island communities hundreds of miles from Johnston Island. Nor did they predict the scared and angry responses from communities across the United States. Government officials were indeed taken aback by the outcry from citizen-activists, such as those in Families Concerned About Nerve Gas Incineration, and ensuing litigation in places like Anniston, Alabama, which was featured on a 2006 environmental justice tour (<http://ej4all.org/popup.anniston.html>).

It is unremarkable to us that the US Army failed to account for the "hysterical"—as one informant described it—public reactions. As revealed in our analysis, the military pursued chemical weapons incineration rationally, as a *technical* issue related to national security, and not as a human rights or health issue. The CWC, as well as the transnational and domestic agencies and practices it spawned, engages in governmentality: crafting citizen-subjects to embrace ideas of "security" whether or not all people really are safer. The military was given a job to do: get rid of the chemical weapons. And indeed, in a technical sense, there has been significant progress. But a notoriously secretive institution, the United States Army, was challenged by having to engage *publicly* in chemical weapons operations, with a considerable degree of transparency and exposure. Organization-

ally and culturally, it was simply unaccustomed to dealing with the public on sensitive issues. Consequently, strategic planning in the early days of chemical weapons disposal, following the abstract terms of the CWC, was about materials, schedules, substances, inspections, and quantitative risk assessments. It was not about the embodied fears of exposure, illness, and gruesome death expressed by average Americans who lived downwind of stockpiles, nor was it about making all communities and all people safer.

Is it even possible, we wonder, to pursue safety and security individually and in aggregate while also being attentive to human bodies and their vulnerabilities? Can bureaucracies such as those of prisons, public health agencies, and military-industrial complexes that are attempting to securitize populations also be protective of the fragility of human bodies, even if those bodies consider themselves to be strong and inviolate, as do our informants profiled above? We suggest that producing “security” relies not only on the labor of working-class men, but also on sociologist Max Weber’s calculated rationality of treaties, bureaucracies, agencies, and administrations. Long criticized as an ideology that erases bodies, embodiment, leakiness, and intuitiveness—the dirt and detritus and seeping mess of human existence—rationality allows social actors to manufacture an etiology for social problems, risks, and threats, and then to devise solutions. But rationality as an ideology and governmentality as its realization together neglect bodies, flesh, bones, feelings, affect, thoughts, and beliefs, and thus are fundamentally flawed mechanisms for creating “safety” for individuals or even universal “security” for all. With no obvious discussion of the human bodies that would eventually labor to implement the CWC, there emerged a disproportionate degree of attributable risk and reinforcement of gendered scripts in how weapons are being dismantled.

We want to emphasize that in the relentless (and obligatory) quest to dispose of chemical weapons, nation states may burn more than munitions. Allegiance to the disembodied techno-rationality of a global arms control treaty seems to have resulted in a corresponding erasure of lived human experiences, a surplus of embodied uncertainties, and unexpected litigation and social unrest. The US Chemical Materials Agency, like the treaty that gave rise to it, frames chemical weapons disposal as a technical problem to be solved in the name of nonproliferation and enhanced international relations. The CWC, at its core, is a document designed within and for governmentality for the purposes of enhancing an aggregative security. Had the human bodies of workers and residents of stock-

pile communities been central to the treaty process or to deliberations of the US military, and had citizens been included in decisions about how to dispose of chemical weapons, implementation might very well have proceeded differently. Chemical exposure may be dangerous, even lethal, yet the embodied risks that people choose, as Beck (1992) theorized, may have very different meanings from those over which they have no control.

The United States and other nations have already disposed of many tons of munitions and we (the nation, the planet) are that much closer to eradication of a deadly weapon of mass destruction. This is undeniably a collective social good, and one that we embrace as citizen-scholars. However, we caution that the erasure of bodies from the treaty process has replicated the systematic deployment of security discourses and practices at the expense of the safety of specific bodies. Policy makers have, in short, risked local bodies and human lives for the sake of abstract goals and the promised achievement of international security. We suggest that lessons learned about the CWC may well be applied to analysis of other treaties, such as the UN Convention Against Torture. When the world's lethal chemical arms have been reduced to ash—as on Johnston Island, now an ecoreserve with no human inhabitants but plenty of wildlife—and the last incinerator dismantled, we may very well be left with a mode of international security tainted by the rocket's red glare and forged with the bodies of men.

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Monica J. Casper is professor and director of humanities, arts, and cultural studies at Arizona State University's New College. Her interests include bodies, feminist technoscience studies, medical sociology, gender and sexuality, women's health, environmental justice, cultural politics of reproduction, security and war, disability studies, trauma studies, and biopolitics. She is coauthor of *Missing Bodies: The Politics of Visibility* (New York University Press, 2009), author of *The Making of the Unborn Patient: A Social Anatomy of Fetal Surgery* (Rutgers University Press, 1998), editor of *Synthetic Planet: Chemical Politics and the Hazards of Modern Life* (Routledge, 2003), and

coeditor of *Corpus: An Interdisciplinary Reader on Bodies and Knowledge* (forthcoming from Palgrave Macmillan). With Lisa Jean Moore, she coedits the New York University Press book series *Biopolitics: Medicine, Technoscience, and Health in the 21st Century*. Casper's current research investigates the biopolitics of maternal/child health in the United States, controversies surrounding the HPV vaccine, and transnational use of permanent sterilization technologies.

Lisa Jean Moore is a medical sociologist and professor at Purchase College, State University of New York. She is the author of *Sperm Counts: Overcome by Man's Most Precious Fluid*; *Missing Bodies: The Politics of Visibility*, with Monica Casper; *The Body Reader*, edited with Mary Kosut; *Gendered Bodies: Feminist Perspectives*, with Judith Lorber; and *Gender and the Social Construction of Illness*, with Judith Lorber. Presently, she is at work on a feminist technoscientific and cultural study of bee-human relationships.

Notes

1. Casper planned to visit nine US stockpile/disposal sites. But before she could tour the next stockpile on the agenda, in Umatilla, Oregon, she became pregnant, and forty-plus weeks later, in November 2001, gave birth to a daughter. The possibility of being exposed to lethal nerve gas while pregnant and on tour in hazardous facilities seemed much less inviting, and certainly no longer remotely "sexy." Never mind the symbolic fear of chemical weapons; Casper was worried about real exposure to her developing fetus, and later to herself as a new mother responsible for an infant. Global security concerns had become deeply intimate.
2. In combat, as evidenced in the Iraq War, *all* targets are deemed to be military targets, and the injury and death of civilian people is seen as unavoidable collateral damage. Thus, the use of white phosphorous in military situations, *even if noncombatants are hurt or killed*, does not violate international protocols such as the CWC—suggesting that the treaty, no matter how far-reaching, is unable to accommodate the manifold needs of states invested in domestic and international security.

Works Cited

- Associated Press. 2010. "Russia Pushes Back Chemical Weapons Deadline." August 3, http://www.google.com/hostednews/ap/article/ALeqM5hDHPWu8IqCe5_kkKbAlP36xvC44QD9HC4B703.

- Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. New Delhi: Sage.
- Berman, Jacqueline. 2007. "The 'Vital Core': From Bare Life to the Biopolitics of Human Security." In *Protecting Human Security in a Post 9/11 World*, ed. Giorgio Shani, Makoto Sato, and Mustapha Kamal Pasha, 30–49. New York: Palgrave Macmillan.
- Bothe, M., N. Ronzitti, and A. Rosas, eds. 1998. *The New Chemical Weapons Convention—Implementation and Prospects*. The Hague: Kluwer Law International.
- Buzan, Barry, and Lene Hansen. 2009. *The Evolution of International Security Studies*. Cambridge: Cambridge University Press.
- Casper, Monica J. 2003. "Chemical Weapons 'Dispersal'? The Mundane Politics of Air Monitoring." In *Synthetic Planet: Chemical Politics and the Hazards of Modern Life*, ed. Monica J. Casper, 51–89. New York: Routledge.
- Casper, Monica J., and Lisa Jean Moore. 2009. *Missing Bodies: The Politics of Visibility*. New York: New York University Press.
- Cirincione, Joseph, Jessica Tuchman Mathews, and George Perkovich. 2004. *WMD in Iraq: Evidence and Implications*. Washington, DC: Carnegie Endowment for International Peace.
- Collier, Stephen J., Andrew Lakoff, and Paul Rabinow. 2004. "Biosecurity: Towards an Anthropology of the Contemporary." *Anthropology Today* 20(5):3–7.
- Crone, Hugh D. 1992. *Banning Chemical Weapons: The Scientific Background*. Cambridge: Cambridge University Press.
- Dawes, James R. 1999. "Language, Violence, and Human Rights Law." *Yale Journal of Law and the Humanities* 11(Summer):215–50.
- Faludi, Susan. 2000. *Stiffed: The Betrayal of the American Man*. New York: HarperPerennial.
- Foucault, Michel. 1979/2010. *The Birth of Biopolitics: Lectures at the Collège de France, 1978–1979*. Picador.
- Hughes, Everett C. 1962. "Good People and Dirty Work." *Social Problems* 10(1):3–11.
- Lyons, Patrick J. 2007. "Tear Gas over Borders." *New York Times*, December 18, <http://thelede.blogs.nytimes.com/2007/12/18/tear-gas-over-borders/>.
- Moore, Lisa Jean. 2007. *Sperm Counts: Overcome by Man's Most Precious Fluid*. New York: New York University Press.
- Popham, Peter. 2005. "U.S. Forces 'Used Chemical Weapons' During Assault on Fallujah." *The Independent*, November 8, <http://www.independent.co.uk/news/world/middle-east/us-forces-used-chemical-weapons-during-assault-on-city-of-fallujah-514433.html>.
- Price, Richard M. 1997. *The Chemical Weapons Taboo*. Ithaca: Cornell University Press.

- Ranucci, Sigfrido, and Maurizio Torrealta. *Fallujah: The Hidden Massacre*. Rome, Italy: RAI News, 2005. Documentary.
- Reynolds, Paul. 2005. "White Phosphorous: Weapon on the Edge." BBC News, <http://news.bbc.co.uk/2/hi/americas/4442988.stm>.
- Roth, Rachel. 2003. *Making Women Pay: The Hidden Cost of Fetal Rights*. Ithaca: Cornell University Press.
- Tucker, Jonathan B. 2007. *War of Nerves: Chemical Warfare from World War I to Al-Qaeda*. New York: Anchor Books.
- Venzke, Ben N. 1998. *The First Responder Chem-Bio Handbook*. Alexandria, VA: Tempest.

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