

Introduction

Wars are wasteful. They lay waste to landscapes and lives and leave destructive traces behind in the pain of personal loss, injury, and trauma, the hazard of hidden and unexploded ordnance, and the slow violence of toxic contamination. But preparing for a war you never fight is also wasteful. Even if shots are never fired, bombs never dropped, permanent preparation for war diverts natural resources, productive forces, and political focus away from other pressing concerns. It can also be just as destructive for human health and the environment. World War III never happened, and yet material evidence of this contest is strewn everywhere: resting at the bottom of the ocean, rusting in deserts, floating in near-Earth orbit, circulating in radioactive bloodstreams.¹

The United States is permanently ready for large-scale wars that may never come. This may one day end, meaning it was not really permanent but temporary. By saying it is permanent, I am not making a prediction about the future, but calling attention to the present state of American industry, politics, and the military, and how they related in the past. Despite occasional reductions in spending, since the world wars American defense spending has tended to steadily increase. And yet, it was not only with the national security state established during the Cold War that war preparation became a permanent investment, seemingly detached from whether the nation was actually at war or not. Permanent war-readiness was realized one piece at a time, not all at once: from the nation's very first navy, built just after the Revolution (chapter 3), to the reconstitution of the military after the Civil War (chapter 5), to the first planes used in combat in World War I (chapter 2), to the creation of a civilian space

agency, the National Aeronautics and Space Administration (NASA), alongside its counterparts in the Department of Defense (DoD), the Advanced Research Projects Agency (ARPA), and the National Reconnaissance Office (NRO) (chapter 4). At the same time, a belief in permanent war-readiness was never guaranteed and never universally supported. Moments of collective opposition to unchecked military growth represent an ironic consequence of this history. In fact, there have been many unintended consequences of America's unprecedented military buildup, including antiwar and environmentalist resistance, as many civilians used the threat of apocalyptic conflagration and the knowledge it generated to create transnational countermovements.² Other consequences have received far less attention. In the chapters that follow, I document American civilians confronted with by-products of exponential military growth, unexpectedly and accidentally, outside the designs of the US defense establishment. Unlike the wastes of actual warfare, these obstacles and opportunities would present themselves whether or not any specific war ever took place.

Waste is a very flexible term with moral, economic, and ecological dimensions to it.³ It may refer to a lost and irredeemable expenditure, one that is the opposite of economic productivity or biological fecundity. This sense of the term is in tension with another, which depicts waste instead as a productive ingredient to ecologies and economies—as a necessary element of capitalism, for instance (see Gidwani and Reddy 2011; Yates 2011; Gidwani 2013). In this book I draw on both meanings of waste in order to capture some of the many ways in which people interact with America's permanent war apparatus. Pursuing military waste in this way leads to experiences and stories far from official military actions, involving people who struggle to represent and reimagine fragments of the military they have come across. These fragments are sometimes literal objects, whether humble devices, hulks of warcraft, or bits of debris. But I also find surprising by-products of permanent war preparation elsewhere, like mass shootings and small islands converted into wilderness areas. Each chapter takes on distinct objects with more or less distance from clearly militarized sites or actors. The overall goal of the book, and its structure, is to reveal lines of continuity between American life and the military, to trace connections even where none are apparent.⁴

My argument is based on ethnographic and archival research undertaken from 2015–18, with the exception of chapter 5, which was completed from 2001–2. My research assistant Dr. Priscilla Bennett and I got to know civilians

throughout the United States who work and live with different forms of military waste. Following Hugh Gusterson, each chapter considers a *microworld* of distinct actors and wastes, offering an anthropological investigation into “the ways in which these worlds clash and fit together” (2004, xxi). While most have not experienced war directly for themselves, their lives have been impacted in some way by permanent war preparation. By examining how civilians manage and imagine relations with permanent war-readiness, this book follows others that challenge the presumed purification of military from civilian worlds.⁵

While virtual, the separation between military and civilian life in the United States is not merely symbolic. Imagine an alien anthropologist landing in Fort Bragg, North Carolina, and taking it to be representative of American society. The visitor would see people with government-issued clothes, haircuts, food, weapons, housing, education, and health care, following a strictly hierarchical division of duties with little room for questioning authority, let alone disobeying orders. What would our alien conclude about this society’s system of government or mode of production? Nothing remotely resembling how Americans tend to think of themselves, their values, and institutions. It would be as if an authoritarian and communist subculture were subsisting within and generously and enthusiastically supported by a society celebrated for its alleged democratic and market freedoms. As Kenneth MacLeish argues, “The military is frequently figured from both within and without as an institution apart from the nation as a whole, existing to protect the public yet exceeding it in discipline, virtue and moral authority” (2013, 188; cf. Mills 1956, 175–76). This virtual divide arguably has further expression in the analytical distinction between militarism and militarization, where the former may suggest the discourse, ideology, or culture associated with being a nation at war and the latter the more practical and material considerations of actual, state-based warfare.⁶

Such compartmentalization is never complete, however, and military and civilian worlds inevitably leak into and shape one another.⁷ Unintended and unruly by-products, or wastes, make permanent war preparation visible in new ways, introducing microworlds of social action where these simple binaries collapse. Exploring diverse interactions with and conceptions of military waste challenge divides between civilian and the military (and the others they might presuppose and reinforce, like “ideal” and “material”). As a result, more people, places, stories, and histories are implicated in permanent war preparation than

we might tend to imagine. This book's distinct structure, which I discuss for the remainder of the introduction, aims to challenge this virtual separation by focusing on people who make sense of and make do with military waste outside of formal war zones.

This book focuses on people who do not experience the direct consequences of war, people who are not among the official combatants engaged in conflict or the many civilians killed, displaced, and dispossessed as a result. The experiences and struggles of people implicated directly in military violence are deserving of attention, but the acts of production and creative destruction that make such violence possible implicate and impact even more people and places whose stories are rarely told. There are many examples of people in the United States impacted by the permanent war economy, but not by war directly. For instance, consider the numerous base closures that followed the conclusion of the Cold War and the military boomtowns that eventually went into decline after they lost critical defense contracts. In April of 2018, the Pentagon released a report stating that 401 active and Base Realignment and Closure (BRAC) installations had reports of toxic perfluorinated compounds being released, 126 of which involved water contamination.⁸

The ethnographic context for two of the chapters, chapter 1 and chapter 5, is the Southern Tier of New York State, a region that has suffered from loss of the defense industry that built up the area in the 1940s and 1950s. The reason I have also focused on other microworlds than this one is to defamiliarize where military remnants are thought to surface and to unsettle expectations about what can be made of them and by whom. Just as war preparation impacts people outside of formal war zones, it also comes into the lives of people outside of formally militarized spaces like testing grounds, factories, laboratories, and bases.

Chapter 1 hews close to such spaces and focuses on a site of military production, a Lockheed Martin facility in Endicott, New York, focusing especially on conceptions of waste that develop within the design and production process. Among other things, the chapter shows how representations of warcraft as waste can shape competitions for DoD contracts as well as weapons testing, research, and development. The people in chapter 2 are more distant from explicitly military spaces, but only slightly. They work at a museum and other businesses that grew alongside a military base outside Tucson, Arizona. Unlike Lockheed employees, who actively seek out military connections, some of the curators and artists involved in remaking and preserving military planes

struggle to distance their activities from their militaristic origins. Such distance is not merely aspirational for the entrepreneurs and divers in Key West, Florida, who are the subject of chapter 3. While they are still concerned with clearly militarized objects, such as warships mothballed and scrapped as wrecks or recyclable metal, some are engaged in a more radical rethinking of ships as homes for marine life and a cure for an ailing ocean.

If the second and third chapters involve attempts by civilians to demilitarize what are clearly military objects, the final three chapters involve by-products that few would claim have military origins at all. The first is orbital space debris, the topic of chapter 4. This would appear to be completely distant, symbolically and geographically, from any formal military base or actor. Moreover, space debris is often regarded as a problem for civilian science or private industry, yet I argue it is a by-product inseparable from the militarization of space. This view is supported by the fact that many of the agencies aiming to solve the space debris problem are directly connected to defense, especially the Defense Advanced Research Projects Agency (DARPA). These agencies also tend to share a commitment to *techno-solutionism*, a conviction that technical mastery can solve the problem of space debris, despite the fact that such an ethos created the debris problem in the first place.

There are many ways that the excesses of war preparation become part of lives and communities nowhere close to a military testing ground or base, a museum or wreck. Chapter 5 focuses on the object of guns and, more specifically, the problem of mass shootings with which they are ideologically and practically related. Like orbital space debris, mass shootings are normally discussed apart from the American military altogether. Yet, mass shooters have been made possible by the militarization of the small arms industry, which also has its historical origins in white supremacy and settler colonialism. More broadly, mass shooters can be characterized as the unexpected by-product of a culture of militarism that disseminates prominent narratives about white men regaining honor through violence. In this way, militarized and militaristic storytelling shapes the motivations of would-be murderers, public representations of their acts of violence, and proposals for preventing more deaths in the future. Moreover, by denying alternative ways of framing these events, narratives of guns “in the right hands” or “in the wrong hands” limit how these problems are imagined and helps replicate circuits of violence again and again. As new relationships between the permanent war-readiness and civilian life become visible, so do new projects of demilitarization.⁹

Chapter 6 also complicates the recognized scope of American militarization and militarism, like the previous two, in this case by examining the environmental devastation that imperils the small outlying islands and atolls incorporated as part of US territory. Expanding what counts as “home front,” the chapter explores hazards that threaten marine environments, in response to which the United States has deployed a global marine conservation strategy, a strategy that also serves longstanding imperial interests in converting islands to wasteland. In this way, various sites and subjects become newly visible as by-products of a history of a geographically unbounded American empire that stretches back before the Cold War.¹⁰ If the first chapter shows how military wastes can be domesticated and made meaningful by weapons manufacturers, by the final chapter the ocean-in-itself cannot be reduced in such a way, threatening to unmake American empire.

With each chapter, personal relationships to the American military appear more and more distant from explicitly militarized domains, telescoping out to include new problems and places. War manufacturers (chapter 1), businesses alongside military bases (chapter 2), and businessmen using military material (chapter 3) all maintain some literal connection to military microworlds, even though with each successive chapter that connection is more and more indirect. Consequently, in those latter two chapters I describe social actors occasionally trying to demilitarize military products, that is, trying to reuse and represent them in such a way that they have different associations.

Very different is orbital space debris (chapter 4), which is not typically characterized as a symptom of defense objectives and agencies, any more than is space exploration generally. Mass shootings (chapter 5) would seem even harder to relate to the military, as if they were entirely a problem of civil society: gun ownership, vulnerable institutions, or health care provision. In these cases, there is a sense in which various problems are already demilitarized in the interpretive domains of public discourse. In these final two chapters I highlight the widespread influence of militarization and militarism in order to demonstrate how the civilian science of space exploration and the civil rights debate around guns, respectively, are continuous with histories of permanent war preparation. In the last chapter, the very boundaries of the American home front become indistinct from its empire overseas. Most Americans are not aware of the country’s historical relationship with its Minor and Outlying Islands, let alone that they have been represented and treated as critical waste over successive phases of American empire (chapter 6). This telescoping struc-

ture is meant to deliberately challenge assumptions about the scope of war preparation and its costs, whom it impacts, and what it entails.¹¹

In the same way that this book attempts to complicate the meaning of *military waste* by exploring intersections between seemingly distinct military and civilian worlds, it is equally experimental with the idea of *military waste*. Approaching the significance of the American military through its waste may seem like an unusual analytic strategy, yet reference to money and lives wasted is actually a fairly common trope in public discourse around the costs of war. There is a long tradition of characterizing both war and war preparation as wasteful in the United States, and accusations of unnecessary spending and misspent funds have dogged the American war economy (see chapter 1). Waste, in this sense, refers to something lost or misused, as in a waste of money or time.

For many in the field and practice of environmental justice, the idea of military waste would understandably conjure visions of the toxic remnants of war. This is an important dimension of military waste and one that will come up in the chapters that follow. But toxicity is not the only quality associated with waste, at least not the only one that matters to people in a given place and time (see Millar 2018, 32). Following Michael Thompson ([1979] 2017), when objects are discarded as rubbish they do not necessarily lose value, but may acquire a quality of indeterminacy, or what Kathleen Millar calls “plasticity.” By this I do not mean that their material qualities are unknowable, but that there is often more than one thing that can be done with them. As a consequence, rubbish can be revalued, sometimes as more valuable, or differently valuable, than it was in its initial use. Thompson’s work was an early contribution to what later became known as material culture studies (Appadurai 1986; Miller 1987, 2005, 2010) and investigations of materiality more broadly (Munn 1986; Ingold 2000, 2011; Keane 2003; Latour 2005; Harman 2009; Bennett 2009). But, for Thompson, rubbish is not just one material like any other, but a distinct kind that represents the limit point of valuation, where one group of people stop caring about something and allow it to become something else entirely.

Wasted warcraft are littered throughout the world as rubbish, left behind with little or no commemoration and unclear possibilities for reuse. Characteristic in this regard is the SS *Richard Montgomery*, which crashed into a sandbank on the Thames River while delivering munitions in 1944.¹² It has remained there ever since, but recent plans to build a nearby airport have

raised concerns about the entombed explosives. Rather than something to memorialize or mitigate, the *Montgomery* is an unpredictable hazard. Rubbish such as this can be found not just in current and former war zones, but in sites of war preparation. This insight resonates with ethnographic studies of memory politics (Navaro-Yashin 2012; Yoneyama 2016) as well as the archaeology of the contemporary (Buchli 1999; Gustafsson et al. 2017), both of which excavate leftover traces of war and war preparation as productive even in their present absence.

The massive arsenal built for a third world war that never happened met with a very different fate. New treaties, especially the Strategic Arms Reduction Talks (START), the Chemical Weapons Convention (CWC), and the Conventional Forces Europe (CFE), required disarmament of nuclear, chemical, and conventional weapons stockpiles, respectively. The end of the Cold War left behind excess military buildup that had to be sold, abandoned, or disposed of in some way.¹³ Much of the research on the impact of war preparation has focused on nuclear weapons research, testing, and economies, and for good reason. Nuclear weapons development represents an extreme case of environmental destruction caused by preparation for an all-out war that never happened and hopefully never will.¹⁴ According to Joseph Masco:

How individuals engage the nuclear complex puts them in a tactile experience not only with the technology of the bomb but also with the nation-state that controls it, making the interrelationship between the human body and nuclear technologies a powerful site of intersection in which to explore questions of national belonging, justice, and everyday life. (2006, 12)

This is also true of conventional weapons and warcraft, albeit to a different extent. Most obviously, military waste might be evaluated in terms of utility or economic salability. The end of the Cold War also meant that the official arms market was gradually replaced with illegal and quasi-legal trades of excess weapons, which dominate the contemporary global arms trade. The global arms trade reached its height beginning with the 1973 OPEC oil embargo, as Western powers indirectly paid for oil with weapons (Becker 1982; see also chapter 1, this volume). According to official data, the arms trade reached its peak toward the end of the Cold War. However, it is likely that illegal arms trades increased at the end of the Cold War (Wezeman 2014).¹⁵

Yet selling old weapons is not always so simple. On the one hand, the more powerful and destructive some military objects are (with nuclear weapons the

most extreme case), the less easily they can be sold as commodities with ordinary exchange value.¹⁶ Masco (2006) regards military weapons as an unusual commodity for this reason. Marx famously credited the moment of exchange with concealing the conditions of the commodity's production and replacing it with a fetishized image, which is all the buyer and seller usually encounter. Military objects can act as fetishes because they circulate globally as images of power and destruction, whether or not they are exchanged on a market. Understanding military weaponry and warcraft as fetishes highlights the fact that military buildup serves functions beyond their possible "consumption" in warfare. Following Mills (1956), this results in a militarized metaphysics—instead of military equipment being seen as a means to an end (namely peace), "military strength," equated with the cost and size of military budgets and products, becomes fetishized as a valued end in itself.

If military weapons serve as fetishes of national power and security, they are also just objects. They age, wear, and fall into disuse; they also shape and are shaped by places they occupy. As Masco (2006) also documents, the mitigation of aging, disused weapons is a growing concern for the American military. Tracing military waste in this way can highlight the instability of national fetishes. According to Peter Custers, the unproductive inputs and by-products of military production, and the final disposal of obsolescent military products themselves, represent a form of negative exchange value. Insofar as these military wastes need to be managed and mitigated, they require the investment of further money and labor, which may overshadow the (also negative) use value of military products as instruments of physical force and national power. Negative exchange value is no mere abstraction. Sailors of the American and Soviet navies were dumping radioactive waste from nuclear projects into the ocean for over a decade after the conclusion of World War II. American sailors were told that this was harmless and given no special training to eliminate unfamiliar by-products of the nuclear age then emerging. The VA and the Navy did not follow up on the health impacts of this harmful exposure, despite unusual health problems reported by some of the service members.¹⁷

In Peter Sloterdijk's words, "The twentieth century will be remembered as the period whose decisive idea consisted in targeting not the body of the enemy, but his environment" (2009, 43). If what he says was true of the preceding century, ours might one day be known as a time when proliferating military wastes no longer respect divisions between weapon and target, ally and enemy, when circulating materials, of uncertain value and toxicity, manifest in

open-ended ways. Warfare always implicates environments to a certain degree. What makes the era of industrial warfare distinct is the severity and unpredictability of the hazards that litter and contaminate postconflict zones. In chapters 3 and 6 I use the concept of the *Polemocene* (from the Greek word *polemos*, meaning war) to think through the relationship between war preparation and environmental transformation.

Contamination can occur even where no battles transpired, as happened after decades of military exercises on the island of Vieques in Puerto Rico. Though never an official US battleground, Vieques was a strategic base due to its proximity to the Panama Canal and its ability to simulate amphibious warfare in the tropics. Antibase activism ended the US occupation in 2003, but the area ceded by the US military was badly polluted.¹⁸ In addition to heavy metal contamination, devastation from repeated bombing, and the storage and dumping of many other toxicants, one of the most alarming legacies for the people of Vieques is the radiation left over from the use of depleted uranium munitions. The impact of leftover radioactive uranium in bases like Vieques, as well as war zones like Iraq, led the US military to switch to tungsten munitions for a time. This lasted several years before new health studies suggested that this “green alternative” might act as a carcinogen as well. More broadly, the ecotoxicology of explosives has been a concern of NATO and the DoD for decades. Mass-produced materials like TNT are not only hazardous ordnance, but threaten human and nonhuman health as they decay over time. The DoD has identified some ten thousand formerly used defense sites (FUDS) in the United States and its territories, whose assessment and remediation had been conducted by the Army Corps of Engineers as of 1986 as part of the FUDS program (Copp 2018). In many cases, toxic substances were not treated with sufficient care, and billions have been spent on their cleanup.

In other cases, there have been efforts to convert closed defense sites into wilderness areas, also known as M2W conversion. This does not put an end to the problems posed by such sites. As geographer David Havlick puts it, “What M2W conversions may put at risk, then, is not simply the character and budget of national wildlife refuges in the United States, but the broader understanding of what it means to militarize certain places” (2007, 162). As I discuss in chapter 6, military sites can also be transformed into wilderness in order to maintain power and erase historical connections between the United States and certain places it has militarized. That chapter begins by associating

contemporary American marine conservation efforts with American settler colonialism and the creation and repurposing of wastes and wastelands. This had its foundation in the systematic dispossession of native lands that were represented as “going to waste,” but by the mid-nineteenth century this same logic was necessary as a means of acquiring guano to cure widespread global soil exhaustion. The chapter ultimately traces a parallel between the shift from a dependence on natural to artificial fertilizer and the transition from guano to oil imperialism, identifying the distinct ecological rifts and challenges that arose as a consequence. These metabolic disruptions on land and sea have not only made possible American empire, it is argued, but been exacerbated by it and potentially placed it at risk.

These examples illustrate two key arguments of this book. First, not only war but also war preparation can transform and contaminate spaces and lives. Second, these impacts are not straightforward but manifest slowly, in open-ended and often unpredictable ways.¹⁹ The disuse of military objects can introduce even more open-ended possibilities. This is where, in Michael Thompson’s terms, military waste transitions from transient to durable value, as when vessels become sites of creative remembering. For instance, an old military wreck may be reassessed later as a transcendent symbol of the nation-state, like the USS *Arizona*, sunk during the attack on Pearl Harbor in 1941. But this kind of shift in rubbish value is not guaranteed.

Much of this book considers the productive afterlife of military waste, not only economic but artistic, ecological, scientific, and discursive.²⁰ As already mentioned, waste need not be taken as a lost expenditure or the opposite of productivity, economic or otherwise, but can instead be regarded as a source of creativity (see Navaro-Yashin 2012, 150–1). If the production of nuclear arms represents the ultimate disvalue—an absolute threat to human and nonhuman life—there are far more open-ended forms of military waste revalued and reimagined while they circulate as rubbish. The toxic remnants of industrial war, including leftover explosives and radiation, are more than objects of destruction. Surprisingly, the presence of lingering hazards in such places may be imaginatively integrated into everyday life.²¹ I use different theoretical terms to express how social actors productively engage with military waste, from reflexive practice (chapter 1) to affordance (chapter 2), world-making (chapter 3), attunement (chapter 4), transvaluation (chapter 5), and wastelanding (chapter 6). In each case, I highlight how people actively engage with waste-related objects, stories, and sites in creative ways. As with many forms

of waste practice, making and unmaking are not clearly opposed, like before and after, but exist, to paraphrase Leah Zani (2019), *in parallel*.²²

I characterize these as various costs of war preparation, costs that are incurred whether or not wars happen, if a society wishes to be ready for all-out war at all times. These costs I have glossed as “wastes” in order to highlight that they are often unintended or involve excesses, accidents, collateral damage. But they are, in each case, ambiguously related to economic and moral forms of valuation. In some cases, waste comes to mean something like “opportunity cost” in an economic sense; in other cases waste represents the limit of any form of economization, where the regeneration of life itself is placed at risk.²³ Some of the people in these chapters imagined or sought out connections with discarded material remains for profit, artistic enjoyment, or political expression. Some of them avoid contact with military waste, which flashes across their vision like so much unwanted dust from the heavens, getting in the way of what they really want to witness. Some find themselves living out their own or other people’s violent militaristic fantasies, trying to fulfill or survive shootings made possible by an overabundance of guns. Some, finally, are trying to imagine relationships with wasted places that have been cast aside, deliberately hidden from reclamation by rightful inhabitants and scrubbed from official American history.

People all over the world are increasingly forced to consider what happens when a global military begins to wear and rot. This might mean recycling old and disused weapons as scrap, discarding them in the ocean, waiting for them to fall from the sky, or mothballing them temporarily until a use can be found for them. Their indeterminacy can be hazardous in many circumstances, but it can also provide opportunities for artists, entrepreneurs, activists, and curators who would make something new out of military discards. In doing so, they contend with both public expectations about how military materials should be treated and the material characteristics of crumbling and unpredictable artifacts. While the revaluation of such materials is therefore constrained, alternative uses of military objects are possible, uses that may challenge representations from popular entertainment, the defense establishment, or the national security state. By exploring relationships with the unintended and unacknowledged by-products of the military, I hope to offer new ways of thinking about the hidden costs of permanent war-readiness which affect the entire world, including forgotten postindustrial towns of the rust belt, distant atolls in the Pacific, and satellites orbiting the planet in space.

METHODOLOGY

With few exceptions, all of the people interviewed for this book are middle-aged or older and white, and all but three are men. This disparity in age, race, and gender reveals important insights into the nature of this research topic and how I chose to approach it.²⁴ All participants in the 2001–2 and 2015–18 research were sought out through institutions. This included prisons, charity organizations, museums, junkyards, artificial reef-making operations, and a private space technology contractor. For the more recent ethnography, institutions were specifically chosen for their connection to some sense of military waste, and older white men were disproportionately represented in these institutions.

One thing that many of these institutions have in common is a connection to science and technology in some form, so that expertise in or passion for topics related to machine tinkering was common. The charities in the Southern Tier of New York were used as sites to recruit current and retired IBM and Lockheed Martin employees. They were all engineers, and they were attracted to charity organizations that involved tinkering with technology in some form. This was also true of the amateur astronomers (which included some of the same people) who spent a significant amount of their time tinkering with telescopes, computers, and cameras. This is the case with people who work with junk and artificial reefs, as well. Many of the latter came to the industry through diving, which has historically also been a more male-dominated activity, as one of the few women interviewed explains in chapter 3. Even the artists and art critic discussed in chapter 2 engage in a form of artistic practice that often requires some technical facility.²⁵ The museums, finally, were typically concerned with technology, and in one case military technology. And the two museums that focused on less strictly technical subjects, a diving museum in Florida and an art museum in Wisconsin, account for two of the three women who were interviewed. Technical expertise and interest were therefore common among people recruited to the project, precisely because the institutions with which they were affiliated tended to favor technically mediated relationships with forms of military waste. As evidence has shown, exposure to science, technology, engineering, and mathematical (or STEM) fields has typically been gendered and racialized in the United States, both historically and in the present day.²⁶

That being said, race and gender are not fixed categorical types—they are fluid and shaped by everyday and extraordinary actions. As Connell and

Messerschmidt argue, “Masculinity is not a fixed entity embedded in the body or personality traits of individuals. Masculinities are configurations of practice that are accomplished in social action and, therefore, can differ according to the gender relations in a particular setting” (2005, 836). Moreover, “hegemonic masculinities can be constructed that do not correspond closely to the lives of any actual men. Yet these models do, in various ways, express widespread ideals, fantasies, and desires” (2005, 838). The same goes for whiteness (Hartigan 1999). The activities of engaging with and being affected by the wastes of the permanent war economy also involve doing (and undoing) masculinity and whiteness in various ways. Sometimes this means embracing humility and care before things that cannot be controlled, as I argue amateur astronomers tend to do, or choosing to act nonviolently or celebrate antimilitarism in some form through art and technology, as some of my other informants do.

Using waste as a methodological guide, the reach of the military industrial complex expands in unexpected ways. Early on in this research, in an incident I recount at the start of chapter 1, I set out to interview an amateur astronomer and instead was surprised to learn that he had much more to teach me about the curious ways that waste is conceptualized by military manufacturers. This moment of ethnographic surprise led me to look more into the history of the greater Binghamton area and its reliance on defense contracts, from the city’s origins to the present day. When I started my affiliation with amateur astronomers, I had intended to learn only about distant and generally demilitarized space junk, but it led me somewhere else, somewhere a lot closer to the functioning of military industry than I ever thought I would get. Similarly, I started this research with the intention of tracking disused and decaying military objects, like ships and planes, to see what had become of the military built to fight World War III after this conflict never came to pass. Instead, I ended up following forms of waste as they traveled from tests of military product quality to art projects and coral reef regeneration, to orbital debris pageants, mass shooting incidents, and atolls covered with seabird guano.²⁷

I follow waste in these various directions largely in order to collapse the distance between military and civilian worlds, complicating how these two seemingly distinct “realms” interrelate. War preparation can contribute to background conditions of social life that fade into invisibility even and especially to the degree that we depend on them. As Deborah Cowen (2014) documents, for instance, the logistics of global trade and travel that are now taken for granted were directly shaped by twentieth-century war and war prepara-

tion. To take one example, at one time, the shoes people wore all over the United States were unknowingly connected to a factory near Binghamton, New York. At critical times in its history, that factory benefited from wartime and postwar military contracts, without which those civilian shoes would not have been produced, sold, and worn. The industrial ruins left behind bear witness to these past connections. The shoes we wear now are no different. As Cynthia Enloe writes, global trade is often premised on militaristic associations:

Threaded through virtually every sneaker you own is some relationship to masculinized militaries. Locating factories in South Korea was a good strategic decision in the eyes of those Oregon-headquartered male Nike executives because of the close alliance between male policymakers in Washington and Seoul. It was a relationship—unequal but intimate—based on their shared anticommunism, their shared commitment to waging the Cold War, and their shared participation in an ambitious international military alliance. (2007, 28)

Given the size and scope of US empire, these kinds of connections are unsurprising. But Americans do more than passively consume products that have military origins. It is also important to note how many continue to profit in unexpected ways from the permanent war economy.

The production of shoes is not so different from the production of knowledge. It would be wrong to imagine a divide between my research and writing process and its object, that is, between ethnography and war preparation. Historically and in the present day, these are not opposed endeavors. For as long as there has been a military industrial complex in the United States, ethnographic research has been a part of it. Anthropological practice has been just as complicit in war preparation as has any other science, in some cases even more so, as ethnographic data has served as important information for war planning and counterinsurgency operations. In many cases, key global areas of concern to the US government were investigated with funding from the CIA through dummy organizations, though anthropologists did not necessarily know this at the time. As David Price's (2008, 2011, 2016) extensive research has uncovered, some did know, some suspected. But even those anthropologists who were not funded directly (or might have rejected such funding had they known) could still produce usable intelligence simply by doing what anthropologists do best. This Price calls "dual-purpose" anthropology, since it could both serve academic interests, careers, and agendas and also help inform the US security state and military (cf. Paglen 2009: 8–9). This is not some