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Elite and marginalised actors in toxic treadmills: challenging the power of the state, military, and economy

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The theoretical frameworks of the treadmill of production and the treadmill of destruction are used to explore how the expansionary dynamics of capitalism and militarism, along with a complicit state apparatus, harm the environment and human health. The treadmill analysis is extended beyond a structural explanation of the occurrence of environmental inequality by showing how elite shareholders interact with marginalised stakeholders. A historical-comparative study of uranium mining on the Navajo Nation's lands and the toxic contamination of the North Carolina military base, Camp Lejeune, is carried out to explore claims-making strategies, to understand how each claimant negotiates their position, and to unearth power differences among multiple interests. Secondary data analysis is conducted on government documents, journalists' accounts, public health records, and scholarly research to elucidate resistance to these treadmills, and bridge the role that the economy, the state, and the military play in degrading human health and the natural environment.

Keywords: treadmill of production; treadmill of destruction; environmental inequality; environmental sociology; social movements; power elite

Introduction

The destruction of the natural environment and the poisoning of humans have been traced to a number of processes perpetuated by the economy, the military, and the state (Schnaiberg 1980, Hooks and Smith 2004, 2005). What is less often emphasised is that within this collection of interrelated institutions, there are varying degrees of social, political, and economic power and human agency that need to be unearthed in order to understand the perpetrators of, and the resisters to, the process of environmental degradation. It is thus important to recognise that both the structure of institutions as well as the agency of institutional actors will influence in varying degrees the process and outcome of

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environmental inequality struggles. Two of the major analytical frameworks that account for conflict among these different strata are the 'treadmill of production' and the 'treadmill of destruction'.

The treadmill of production outlines how the expansionary dynamics of capitalism harm the physical and social environment. Simply put, competition among corporations leads to production practices that continually get upgraded and intensified, thus leading to increased levels of environmental degradation, social exploitation, and injustice. Because the economic treadmill elites have greatest access to capital and labour, they are driven by their ability to market their practices profitably, and thereby cause environmental and social degradation (Gould *et al.* 2008). Thus, the elites within the treadmill are empowered by their structural position within the economy to maintain the logic of the treadmill.¹ This process requires the acquiescence of political leaders to keep state regulations loose. Overall, the treadmill of production is helpful in elucidating the harmful processes of externalising costs onto the environment without these being included in the production process.

The treadmill of destruction takes a separate route when explaining the degradation of the environment and human health. Given the destructive impact of the military on the environment – from an overreliance on natural resources such as fossil fuels and minable metals, the contamination of the land due to nuclear weapons, to the leaking of heavy metals from military industrial processes into aquifers or soils – it is important to focus on the expansionary dynamics of war and militarism. Hooks and Smith (2004, 2005) maintain that there are multiple treadmills, but instead of focusing on the economic activity of capitalism, they focus on geopolitical competition and arms races among states. The treadmill of destruction emphasises how the relationship between the state and the military is responsible for generating massive amounts of environmental and other bads in ways that are distinct from the logic of capitalism.

Objectives

While the processes of the two treadmills have been clearly developed and distinguished, there are a number of areas that have been under-theorised. Therefore, I seek to do three things. First, I link the role of the economy, state, and military in the production of environmental inequality, paying particular attention to the role played by treadmill elites. All social and environmental processes are dynamic, which therefore requires researchers to take a dynamic approach to understanding as best as possible what is taking place. Hooks and Smith (2005, p. 23) clearly note that 'research should examine the manner in which these two treadmills intersect (often amplifying environmental impacts) in specific times and places'. Recent empirical research has shown that not only is the US military driving environmental problems domestically, but that the logic of the treadmill of destruction can be applied in an international

comparative perspective (Jorgenson *et al.* 2010). Furthermore, a country's ecological footprint is tied to economic development and military growth; both treadmills have unique, independent ecological impacts on the environment (Jorgenson and Clark 2009). Nonetheless, this structural analysis, which shows that capitalist economies, the military, and the state intersect in ways that produce many environmental bads, can be further illuminated through an analysis of how treadmill elites are imbricated with these institutions.

Second, I explore activists' responses to environmental inequality. It has been well established that these two treadmills operate to produce many environmental bads, but these treadmills have also been resisted (Pellow 2007). While treadmill scholars have noted that the treadmill 'model indicates that political conflict with the ruling elite is inevitable and must be waged successfully to achieve socio-environmental sustainability' and justice, little research has attempted to explore the relationship between these elites and those fighting for environmental justice (Gould *et al.* 2008, p. 86). I agree that the central struggle of groups fighting for environmental justice is 'over the definition of environmental and social reality between social movement groups and the corporate-state structures that produce environmental inequalities' (Pellow and Brulle 2006, p. 12). However, it is also important to explicitly explore how the military, as part of the corporate-state structure, is implicated in environmental inequality struggles.

Third, I explore the differences in tactics and power among two different groups of people exposed to environmental hazards. It is insufficient to talk about the stakeholders and institutions producing environmental inequality without also talking about those who create alternative spaces of everyday resistance and environmentally just alternatives (Pellow 2000). Moreover, any discussion about those resisting such environmental hazards should include an exploration of how relations of power are historically shaped. There are differences in the abilities of different groups of environmental victims to make claims and seek justice. Given the complex relationship between the economy, the military, the state, and those resisting processes harmful to human and ecological health, I dissect two cases of environmental inequality to show how these processes and the stakeholders contained therein are complexly interrelated.

The first case involves uranium mining on the Navajo Indian reservation in the southwest United States. Not only has the land been turned into a toxic waste site, but the health of segments of the Navajo community has been severely compromised (Churchill 2002, Brugge *et al.* 2006, Hooks and Smith 2004, US EPA 2008). I trace the power imbalances between the producers of environmental toxics within the economy, the military and the state, and the recipients of these toxics. The second case involves water contamination at Camp Lejeune, a United States Marine Corps base in North Carolina. Claims of health problems from exposure to industrial solvents trichloroethylene (TCE) and perchloroethylene (PCE) have been well documented (ATSDR 1998, Sonnenfeld *et al.* 2001). This case reveals conflicts between elites within the state and the military. There is similarly a power imbalance between the

institutions responsible for poisoning military families' water supply and the families who have been fighting for a just response. Together these cases reveal two distinct relations with both treadmills: first, the conflict that arises between the economy, the state, and the military when poisoned groups resist being victimised; second, the differences between Navajo activists and Camp Lejeune military families' abilities to frame and fight for an environmentally just outcome.

Methods

My goal is to situate the abovementioned cases structurally within a framework that integrates the two treadmills as the drivers of environmental inequality, while concurrently recognising that elites within the economy, state, and military are the targets of activists challenging the logical outcomes of capitalist and military expansion. Pellow (2000) argues for a research perspective – the Environmental Inequality Formation – which links together three major areas often overlooked by researchers of environmental inequality: process and history; multiple stakeholder relationships; and the production and consumption of goods from a lifecycle approach. While all three perspectives may be important in environmental inequality struggles, I will primarily focus on process and history, and multiple stakeholder relationships. In order to strike a balance between generalisability and context-specificity, I use a historical-comparative method, which focuses on two federally designated lands that have had segments of their populations harmed by environmental toxics. The historical-comparative method allows for more methodological flexibility between theory and data (i.e. theory informs data and data informs theory), it allows for flexibility across time and space, and it recognises that theory is provisional (i.e. explanations may be both common across cases and/or specific to cases) (Tilly 1984, McMichael 1990). Thus, this method lends itself to exploring the intersection of structure and agency in conflicts over environmental inequality, without assuming that multiple theoretical perspectives will operate in the same way in each historical moment.

I rely upon secondary data analysis of government documents, newspaper accounts, public health records, and scholarly research. Efforts were made to understand how advocacy groups, government agencies, the military, and relevant economic interests framed their positions on the environmental externalities experienced by Navajo and Camp Lejeune residents. The data were analysed with an eye to reconstructing the history of these struggles, paying special attention to how the Navajo and Camp Lejeune residents resisted toxics in their communities.

Relationships between the economy, the state, and the military

A number of prominent elite- and state-centred theories have been put forth to explain how the relationship between the economy, the state, and military

produces various forms of inequality. I argue that explanations of environmental inequality are not reducible to either the institutions or the social actors involved. The case studies reveal that while the logics of the treadmills of production and destruction often frame the context within which struggles over environmental inequality occur, the elites within these treadmills mutually constitute and organise such processes.

In order for the military to maintain its power it requires cooperation from and coordination with other sectors of society.² According to the Department of Defense (DOD 2008):

The United States requires freedom of action in the global commons and strategic access to important regions of the world to meet our national security needs. The well being of the global economy is contingent on ready access to energy resources ... current trends indicate an increasing reliance on petroleum products from areas of instability in the coming years, not reduced reliance. The United States will continue to foster access to and flow of energy resources vital to the world economy. (p. 16)

This elite web puts profits, military might, and political gain before environmental and human health.

Congress must pass bills and corporations must agree to mine the raw materials needed for the cycle of production and destruction to continue. The military is responsible for over 29,000 toxic hot spots on 11,000 active and former military properties and for 129 out of 158 federal facilities on the Superfund National Priority List (DOD 2002). The military also consumes more energy than any other branch of the US government (US EIA 2010). It has been estimated that for fiscal year 2009, one-third of the Department of Defense (DOD) budget (about \$200 billion), including the war in Iraq, will go towards securing access to energy (Dancs *et al.* 2008). Moreover, the DOD has sought and in many instances received exemptions from Congress to many environmental laws (Sislin 2005, Bearden 2007).

The environmental and health problems directly associated with warfare are apparent, but the lead up to war and constant vigilance by the US military cause many environmental problems as well (Sidel and Levy 2003). The military requires the funding and acquiescence of influential actors within the political economy in order to continually escape responsibility for such toxic practices. At the same time, if corporations or the state can avoid sanctions for polluting the natural and human environment, then powerful stakeholders who perpetuate this standard will have no motivation to change their behaviour (Gedicks 2001, Pellow 2007).

Mills' (2000) contends that there are three interlocking structural hierarchies of power within the United States, the corporate sector, the political apparatus, and the military, within which elites mutually support one another because they share similar backgrounds, experiences, and aspirations. With these linkages, power and control are centralised, which makes it easier for the power elite to act on their interests, namely profit, power, and military might. Domhoff (2009) also

argues that there is a power elite in the United States, in which a corporate community develops policy-planning and opinion-shaping networks that disproportionally influence the electoral process and policymaking within the federal government. From this perspective, state and military elites are *not* coequal with economic elites. Given that defence receives the largest share of the US federal budget, most of which is funnelled to the private sector, it is clear that the corporate community is especially invested in national security. However, the military-industrial complex³ as a social force reproduces its power through economic elites *and* state and military elites, who often perpetrate, and financially and politically profit from, environmental degradation (Santana 2002). Therefore, from a Millsian elite theory perspective, the treadmills of production and destruction operate as mutually reinforcing organisational logics that work to secure access to natural resources, labour pools, markets, and important geopolitical locales as a means to maintain elite power.

More state-centred scholars contend that the only sanctioned violence is state sanctioned violence because the military is at the heart of the state and therefore legitimates state power through a monopoly on the means of coercion; the history of state building/maintenance is the history of war-making (Tilly 1990, Hooks and Smith 2004). In the process of state building, these coercive means have been responsible for Native Americans disproportionately experiencing environmental inequality from industrial toxics on and around military bases (Hooks and Smith 2004). In this respect, environmental inequality tied to the geopolitical goals of the treadmill of destruction, which force people to live in toxic places, is amplified by industrial capitalism.

Inspired by Mills, Hooks and Smith (2005) expand the treadmill literature beyond its economic biases to include the distinct role that the logic of war-making plays in producing environmental degradation. However, war-making not only has geopolitical ends such as securing access to more military bases, but also economic ends such as securing access to natural resources, which may then be used in production processes that benefit the state and industrial corporations (Tilly 1990).⁴ Thus the treadmills of production and destruction are not mutually exclusive. Yet, to focus only on the institutional logics and macro expressions of this link neglects the agency of elites.⁵

Uranium mining on Navajo land

Elites in the economy, state, and military all worked together to produce the destructive dynamic that ultimately led to environmental and human health problems for the Navajo. Elites within the economy financially profited from mining uranium, building nuclear power plants, and making nuclear weapons; elites within the state greased the wheels of war while also maintaining local political power; and the military acquired access to a source of raw material that was used to build powerful weapons (Pasternak 2010). The expansionary dynamics of capitalism and US geopolitical/military interests worked in tandem with the state apparatus to perpetrate environmental inequality faced

by Navajo miners and Navajo families exposed to various toxics associated with uranium.

Uranium was first discovered in the United States in the late nineteenth century. However, uranium was not in high demand for military purposes until the 1930s, but demand increased throughout World War II with the creation of the Manhattan Project. From its outset uranium was seen as a means to the geopolitical ends of the United States; the first ever nuclear weapons were developed during this time. The US government became the sole purchaser of uranium between 1948 and 1971, and then contracted many private companies to run these mines. In 1948 uranium mining began on the 26,000 square mile Navajo Nation reservation, most of which was under the control of the Manhattan Project and the Atomic Energy Commission. While an arms race and geopolitical factors helped to drive the uranium mining boom, it required a work force to extract the needed raw materials.⁶

When uranium mining began in the late 1940s, many Navajo did not speak English and were not educated about the health problems associated with radiation, despite scientific certainty by 1951 that radon exposure from uranium mining was the causal agent for lung cancer in miners (Brugge and Goble 2002). However, the misinformation campaign continued for many years even though uranium mining was linked to respiratory problems such as silicosis, tuberculosis, pneumonia, and emphysema. By the 1960s, not only were Navajo beginning to die of respiratory diseases from exposure to radon, but they were being exposed to radioactive pollution in the water supply from uranium tailings, which led to other health problems (US EPA 2008).

Uranium mining continued throughout the 1970s and 1980s as the United States pursued an arms race with the Soviet Union. The geopolitical interest of spreading democracy underlined the development of weapons so destructive that the Soviets pursued the same strategy in pursuit of spreading communism. To make it easier for mining companies to extract uranium for nuclear weapons throughout the 1960s and 1970s, 'the federal government developed programs to depopulate the reservations by encouraging migration to urban areas using the lure of jobs and economic support' (Clark 2002, p. 418). At the same time, multinational mining and energy companies began looking for places to extract raw materials without having to worry about government interference (Gedicks 1998). As military stockpiles were largely built up by the early 1970s, commercial stockpiles were pursued until the early 1990s for domestic nuclear energy projects (Brugge and Goble 2002). Despite the interrelated responsibility of the economy, military, and the state in the production of environmental and health problems, many Navajo have fought for environmental remediation and just restitution and/or compensation (Pasternak 2010).

Resisting a toxic legacy

During this period of uranium mining the Navajo retained their sovereignty and right to self-determination to an extent. Given that their choices have been

structurally limited due to a history of colonialism, they have used their sovereign status as the crux of many arguments that demand appropriate federal assistance or restitution for having been wronged (Ishiyama 2003). While these avenues may be insufficient to change the logic of the treadmills, they are important to understand as a form of resistance. The demand for restitution and clean up of uranium pollution began once the widows of Navajo miners believed that their husbands' health problems were linked to uranium exposure in the mines and water (Eichstaedt 1994). While a number of lawsuits were filed against the mining corporations and the federal government seeking damages for uranium miners, almost all of them have been lost (Brugge and Goble 2002). However, by the 1970s, the Navajo were gaining a larger audience both within the public and within the halls of Congress at a time when the anti-nuclear movement was becoming more politically active and visible. In 1978 the Uranium Mine Tailings Radiation Control Act was passed, but despite it being touted as an important legal mechanism to clean up and protect those living next to uranium mines, it was slow in implementing such goals (Churchill 2002).

With the partial core meltdown of the Three Mile Island generating station in 1979, Americans became increasingly mobilised against the expansion of nuclear energy. This industrial accident sparked national protest, opening a political opportunity in the 1980s for the Navajo to more forcefully demand restitution and Congressional hearings on radiation exposure. Moreover, with the collapse of the Soviet Union, and the United States emerging as the dominant global military power at the end of the Cold War, pressures to domestically mine uranium diminished. The number of mining operations also began to decline due to the anti-nuclear climate of the 1980s and 1990s, and reduced global demand tied to continued reliance on traditional fossil fuels and new alternative energy ventures. Finally, in 1990 the federal government passed the Radiation Exposure Compensation Act (RECA), which compensated former miners and their survivors for damages resulting from toxic exposure to uranium. Unfortunately, this token piece of legislation has been viewed by activists as insufficient in addressing the sustained exposure to radiation in the Navajo Nation's air, land, and water.

Groups like the Navajo-run public interest organisation, Southwest Research and Information Center (SRIC), continue to resist attempts by corporations and the US government to allow uranium mines back onto Navajo land and continue to fight for compensation. However, they have not directly tackled the military as part of their mission for at least two major reasons. First, the Navajo Nation is a sovereign nation that has treaties with the US government, which can be used to receive restitution. Second, the military cannot directly be pressured to change their practices, unlike the state and corporations who are the publicly visible war-making entities. Moreover, military production facilities are often exempt from environmental protection laws (Gould 2007). Military practices have to be changed through the state. SRIC does not legally challenge the military for its perpetuation of uranium

projects because it is difficult for people who have been harmed in the process of war-making to hold a hegemonically powerful institution accountable.

An attempt was made in the 1990s to ban uranium through a tribal executive order, but this was stopped by the Navajo council largely because there were more voices arguing that mining operations were a stable source of employment (Pasternak 2010). Despite unresolved conflicts between those with economic concerns and those concerned that environmental and health problems would again harm many Navajo, the council decided in 2005 to resort to the sovereign control over their lands to ban uranium mining and milling. The purpose of the Diné Natural Resources Protection Act (DNRPA) of 2005 is to 'ensure that no further damage to the culture, society, and economy of the Navajo Nation occurs because of uranium mining ... and uranium processing until all adverse economic, environmental and human health effects from past uranium mining and processing have been eliminated or substantially reduced' (SRIC 2005). Using the American legal system to prove the intent to environmentally discriminate by corporations, the state, or the military has been largely unsuccessful since the first Navajo were exposed over 50 years ago to uranium's toxic by-products. Therefore, the recognition of an exploited past pushed many Navajo to use the power at their disposal to deny further access to uranium.

Ironically, the Navajo's sovereignty has also provided challenges to remediating the toxic legacies of uranium mining. Until 2008, the Navajo Nation Environmental Protection Agency (NNEPA) did not have a legal foundation from which to adequately respond on a scale necessary to clean up contaminated sites. Moreover, because most state and federal environmental protection and remediation laws do not apply to Navajo territory, there was a need to reconcile the differences. With the passage of the *Navajo Nation Comprehensive Environmental Response, Compensation and Liability Act*, the Navajo now have legal mechanisms to regulate the disposal of toxic waste and requirements to work with the appropriate federal agencies.

Because this toxic legacy is part of the process by which a colonising force uses the militarily supported political economy to incorporate, but at the same time surround both lands and people, the DNRPA represents a particular notion of resistance: *decolonisation*. Churchill (2002, p. 26) sums up this one form of Native American resistance, 'Liberation can be found nowhere but in our ultimate ability to detach ourselves from the corpus of the states themselves, dismantling their purported geographic integrity and, to that extent, radically diminishing the basis upon which they wield economic, political and military power'. Despite unequal footing to begin with, the Navajo benefited from opening political opportunity structures, while simultaneously mounting a successful resistance grounded in a counter hegemonic discourse and set of tactics that won both restitution for previous damages from uranium mining, and autonomy from those wanting to mine.

Water contamination at Camp Lejeune, North Carolina

The toxic contamination of Camp Lejeune's military base water supply over a 30-year period complicates the relationship among treadmill elites. The US economy and state require a dedicated military force that can be summoned at any moment to carry out missions dedicated to protecting elite interests, but this military force may be harmed before or after entering the battlefield. Soldiers and their families are often victims of domestic 'collateral damage' but will often challenge the military if there is probable cause.

Camp Lejeune was founded in 1942 with the purpose of serving as an east coast amphibious training facility just as the United States was preparing to enter World War II. Not long after the base was built, soldiers and their families were exposed to toxic water. According to the Agency for Toxic Substances and Disease Registry (ATSDR) (1998) beginning in 1957 and until 1987 water from two water treatment plants was contaminated with toxic chemicals dangerous to humans. Tarawa Terrace Treatment Plant was contaminated with PCE (perchloroethylene) from the waste disposal practices at ABC One-Hour Cleaners, an off-base dry cleaning firm, while Hadnot Point Treatment Plant was contaminated by TCE (trichloroethylene), DCE (t-1,2-dichloroethylene), PCE, and benzene from leaking underground storage tanks, industrial area spills, and waste disposal sites. The levels of these chemicals in people's water supply were as high as 40 times the acceptable safety limit. Military personnel and their families exposed to contaminated water have come forward with many personal stories that connect their health symptoms with chemicals known to have been in the water. Much of the battle between the Marine Corps, government agencies, and soldiers, then, is over whether the toxic chemicals found in the water supply have led to reported health problems.

Even though there is debate about the health implications from the leaked chemicals, it is suspected that many of the chemicals found in the water supply are dangerous to human health. According to the Hazardous Substances Data Bank, PCE, TCE, and DCE are probably, and benzene is definitely, carcinogenic to humans. The Marine Corps did not discover the volatile organic compounds until 1982 and according to the Environment Protection Agency (EPA) did not initiate the first clean up until 1993. The slow response, despite the Marine Corps' own assessment and concerns voiced by military personnel and their families, has politicised the conflict.

At congressional hearings held in 2007 on the contamination at Camp Lejeune, it was revealed that as many as 1 million people were exposed to contaminated water (Hefling 2007). The House Energy and Commerce panel even went so far as to say that these Marines are 'poisoned patriots'. Traditionally supportive relationships between state and military elites have been strained. Brad Miller (D-NC), who chaired the House Committee on Science and Technology's Subcommittee on Investigations and Oversight, said, 'We've known about serious contamination at Lejeune for more than two decades; it's past time for the Navy and Marines to take care of their own' (Subcommittee on Investigations and Oversight 2010). Local political pressure,

coupled with the notion that rank and file military personnel hold a valued position in American society, necessitates a more compassionate response by the military. Thus, opening political opportunities and salient alternative discourses have favoured Camp Lejeune victims.

The particularly striking reality is that the military has a culture of insularity and processes separate from the mainstream economic and state apparatuses, yet because American soldiers and their families were harmed while serving in the armed forces, other state agencies have intervened. The EPA, ATSDR, and Congress are working with the Marine Corps to discover how people were contaminated, and resolve the health problems of those exposed to water soluble toxics. Those whose health has been compromised have had to challenge the public discourse framing the military as protectors of the nation, not the environment. However, those fighting for restitution have been organising for years, with some successfully staged actions along the way, by noting that in the process of 'protecting' the nation they were harmed by the military's polluting practices. While the connection between the economy, the state, and military is more nuanced in producing environmental inequality for those at Camp Lejeune, this case reveals the adjudicatory particularities of power between the state and military.

Struggling for recognition and compensation

Following the placement of Camp Lejeune on the EPA's National Superfund Priority list in 1989 the ATSDR found that there were very high rates of miscarriages, birth defects, and leukaemia (Government Accountability Office (GAO) 2007). This finding initiated a firestorm as military personnel and their families began making connections between poor health and the chemicals they had been bathing in and drinking from. Wanting to pre-empt the onslaught of public outcry, the base complied with federal law mandating public health assessments for sites on the National Priority List. The initial study by the ATSDR, which studied the impacts of TCE and PCE on the development of children while in utero, was not completed until 1998, by which point military families had begun to organise and sue for damages. Because military families enjoy more social and political capital than the Navajo, the government's response to the health crisis at Camp Lejeune was much quicker.

The two major organisations representing military families are The, Few, The Proud, The Forgotten (TFTPTF), whose intent is to provide information about the toxic legacy of this base (TFTPTF no date), and The Homefront Empowered Survivors Take All Necessary Defense (THE STAND), a group who want 'justice for civilian, military and military dependent peace-keepers that were wounded as a result of toxic chemical poisoning at Camp Lejeune' (THE STAND no date). Both of these groups have used the internet to spread information about the plight of many former Camp Lejeune residents. This has allowed them to collectively fight for damages and demand scientific studies to determine the health impact of the water pollution on all adults and children

who were living on the base. The case of Camp Lejeune highlights how perceived inequalities have motivated those suffering health problems to fight for more accurate health assessments.

Beyond knowledge contests,⁷ there are strategic difficulties facing those seeking restitution. First, military families relocate on a regular basis, often not spending enough time on one base to establish many roots or reasons to fight against toxic exposure. This provides an obstacle to creating place-based frames of resistance. Second, the military and state rely on a mobile force that does not question military hierarchy. The nomadic military culture works to the advantage of treadmill elites because it means that the scientific and agency community have more difficulty tracing people's health problems. Last, the case of Camp Lejeune is similar to the Oak Ridge nuclear reservation struggle against the hegemony of 'national security' interests, institutionally expressed by the fact that the military and state have greater resources with which to cast doubt on the validity of claims of illness from military toxics (Cable *et al.* 2008).

One major point of contention has been over the military and state's version of collaboration and the community's idea of collaboration. The DOD has attempted to co-opt the remediation process by setting up an Installation Restoration Program that uses the concept of 'partnering' to clean up contaminated sites. The 'partners' of the Restoration Advisory Board include groups like the Atlantic Division, Naval Facilities Engineering Command (LANTDIV), the Marine Corps Base Camp Lejeune and the US EPA, Region IV, and a few community members. The ATSDR has set up a similar body called a community assistance panel (CAP), which regularly consists of members from ATSDR and the DOD, but few community members. One major problem that former Camp Lejeune residents have with these community formats is that they are controlled by bureaucrats and technocrats who often ape the state agency and military leaders they represent.

The intent of the community advisory boards (CAB) set up by the DOD and ATSDR is to increase collaborative and democratic participation with communities harmed from military hazardous wastes. In spite of these good intentions, the practice of DOD controlled CABs is narrowly defined by a military culture that seeks members of the community, who may not be representative of community interests and who may be co-opted in the course of regular communication (Laurian 2007). The danger of such co-optation is that representatives of the community who sit on these CABs do not adequately disseminate information to all members of the communities they supposedly represent. Nonetheless, there are members who sit on the board set up by the ATSDR who want to represent their community's concerns. At a past board meeting one former resident, frustrated with the lack of community representation, said,

(W)henver there's any damn meetings between DOD and ATSDR, the CAP's not included in it. And that's a bunch of crap. We're here to represent the

community. We need to have representation at all meetings, and we need to see all correspondence that takes place between the Department of the Navy, the Department of Defense, the United States Marine Corps . . . We need to be privy to that information or we can't keep the affected community informed. (ATSDR 2008)

It has been difficult to reach all of the estimated 1 million people who were exposed to PCE and TCE in their water supply, which complicates the CABs ability to get adequate feedback. Therefore, one of the major ways these advocacy groups have challenged the military's version of events is by setting up online discussion groups and testimonial pages that provide a forum for people to tell their stories. This empowering mechanism has helped mobilise thousands of people to challenge official expert knowledge by calling their representatives, attending CAB meetings, congressional hearings, and rallies, and educating others who may have been harmed. By sharing knowledge, more people have learned about their health problems and how they can take action. Many former residents at Camp Lejeune have taken legal action against the federal government for health problems they believe are the result of exposure to military toxics (GAO 2007). Most of these lawsuits have been unsuccessful and many are still being debated, so it has yet to be seen if military families will be compensated for their health problems. A bill in the US Senate titled *The Caring for Camp Lejeune Veterans Act of 2009*, which would have provided medical care to those experiencing health problems after living at Camp Lejeune, was killed in committee due to pressure from the Department of Veterans Affairs and the Pentagon. Overall, those exposed to toxics at Camp Lejeune have been successful in raising awareness of their plight, but only moderately successful in remediating the toxic sites and receiving damages from the federal government.

Conclusion: resisting the environmental inequality of intersecting treadmills

These cases reveal the often complicated intersections between the treadmills of production and destruction in driving environmental degradation in three distinct ways. First, although the power afforded treadmill elites comes from the institutions they represent, these capitalists, military planners, and politicians used both discursive and organisational tools to maintain the balance of power in their favour. Second, these cases help to clarify the treadmill literature by exploring how institutional actors are constrained by, but are often in conflict with, institutional norms and logics. Moreover, those who have had their environment and bodies harmed because they were spatially and temporally near a particular node of environmentally destructive war-making, are collectively fighting back and demanding accountability. Finally, the treadmill literature is advanced by focusing on the nature of the political conflict between structurally marginalised activists and treadmill elites. Soldiers and their families at Camp Lejeune who suffered health problems from contaminated water, and the Navajo who

were exposed to the toxics of uranium mining, continue to fight in the political and social claims-making arena to both be free from toxics in their communities, and for restitution for harm from military toxics.

Although the Navajo and those at Camp Lejeune have not always explicitly framed their struggle as being for 'environmental justice', they have resisted attempts by the state, economy, and *military* to exploit their health for political power, profit, and military might. The success of a movement will often hinge on its ability to frame grievance(s) (Čapek 1993). This is not to say that a group of people only need to speak, write, and disseminate their ideas in a convincing way in order to be successful. In fact, these cases show how various political opportunities opened in order for claims from the Navajo and Camp Lejeune residents to have any traction at all. Rather, framing is tactically an integral element of environmental struggles that seek to change the social and political acceptance of polluting practices. It is helpful to see the social movements that challenge the military-backed political economy as counter-hegemonic struggles that directly or indirectly challenge the 'cultural, political, intellectual, and economic leadership exercised by in-establishment groups partially or in its entirety' (Kebede 2005, p. 82).

Because the military is framed as an essential institution with phrases such as 'homeland security', or 'fighting for freedom', those who question the legitimacy of this discourse are oftentimes called 'unpatriotic'. However, groups harmed by environmental hazards have their own arsenal of language and tactics that rupture the role of the military. At times this results in partial counter-hegemonies that seek resolution within the dominant hegemony. This is more visible in the case of Camp Lejeune. These military families are working within the confines of the CAB process, but are using a discourse that challenges governmental and military framing of these issues. This resistance has been mollified in bureaucratic procedures created by military and government agencies.⁸ The community participation process has been used by the government and military as a token of justice, but this process protects the larger economic, political, and military structures.

At other times, total counter-hegemonies evolve to demand or create an alternative system. The Navajo leadership ultimately resorted to their legal sovereignty in order to ban uranium mining. However, as predicted by the environmental inequality formation (Pellow 2000), this was not without internal struggles among the Navajo on whether uranium mining should be allowed if health protections were guaranteed, because it would provide the community with much needed jobs and royalties (Pasternak 2010). Unlike military families at Camp Lejeune, the Navajo, after many years of using mainstream political and legal processes, opted for a mechanism that did not change the economic, political, or military order, but shut it out from their community. By using phrases such as 'ensure the rights of residents', 'protect natural resources', and 'promote the health of the people', Navajo activists provided the discursive basis to challenge the notion that it is permissible for the US military, in the name of security, to escape responsibility for what the

military often terms 'collateral damage'. What makes these Navajo activist claims especially powerful is that they focus on the human ramifications of a military-backed political economy that produces destructive externalities. The implications of such a critique are often beyond the legal scope; when economic and geopolitical ends are placed before the health and livelihoods of exposed communities, structural changes are needed.

While both the Navajo and those at Camp Lejeune were able to frame their grievances using a variety of justice and rights frames, there are differences in the constraints and drivers of their choice of mobilisation tactics. The Navajo faced a long colonial history of discrimination that made it difficult to challenge the negative environmental and health externalities associated with uranium mining. However, numerous political opportunities opened in the late 1970s and 1980s that shifted economic and political elite interests away from extracting uranium, and building nuclear weapons and nuclear power plants, which allowed the Navajo to challenge their experience of environmental inequality. Nonetheless, treadmill elites had to be politically pressured before giving any concessions recognising the exploitation of the Navajo and their land. The Navajo built alliances with legal centres, information groups, environmental groups, and social justice organisations to disseminate an environmental inequality frame demanding a just response to their health problems. Ultimately, the treadmill would still be consuming resources on Navajo territory at the cost of environmental and human degradation were it not for the Navajo banning uranium mining.

On the other hand, the families at Camp Lejeune were not subject to a long history of discrimination before they discovered that they had been drinking and bathing in contaminated water. Although those in the military have been unknowingly subject to many unethical scientific experiments and suffered from the toxic practices of the military (Bullman and Kang 1994, Moreno 2001), the military and US government have presented a very different public story, resulting in a different public understanding of their grievances. Those at Camp Lejeune were uninformed about the contaminated water for many years and were more spatially mobile than the Navajo. Therefore, when activists began demanding health studies, restitution, and/or compensation, mobility made it difficult to link illnesses to exposure to contaminated water. This increased the ability of the military and government health agencies to cast doubt on claims concerning health problems. Because military families move so often, the internet has been vital for mobilising former Camp Lejeune residents.

However, they have been less creative in their coalition building. Because of the military chain of command and the built-in protocol for resolving disputes, military members and their families were closer to the treadmill elites than the Navajo. Their concerns were more quickly investigated and the procedure to resolve these concerns was taken up by both government and military agencies, albeit through an internally driven and controlled CAB process. Also, whereas the Navajo could use civilian courts to sue corporations and/or the federal

government over health problems associated with uranium mining, active military members who may have developed cancer or other health problems associated with water contamination at Camp Lejeune, or anyone on their behalf, are prevented from using civilian courts; every complaint has to be vetted through the military court's chain of command. Without the same level of autonomy as the Navajo, institutionalised processes slowed down the military families' fight for justice by co-opting mechanisms controlled and created by treadmill elites.

Resisting the treadmills' momentum is made difficult when power is concentrated on a structural level within the economy, government, and military, and when elites within these institutions wield a dominant discourse to support their destructive practices in combination with having access to the material and monetary resources necessary to maintain power. Many groups of people though are finding ways to resist or reform the treadmills of production and destruction. However, to paraphrase Audre Lorde (1984), using elite means may temporarily disrupt elite power, but will never bring about transformative structural change. This perspective illustrates a challenge that exists for groups struggling against the most powerful economy, government, and military in the world: ultimately an alternative is needed. Until then, the expansionary logic of the treadmills of production and destruction will continue to perpetuate the destruction of the environment and the impairment of human health.

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Notes

1. Treadmill elites are those shareholders (politicians, military planners, managers and investors) within the political economy who have a disproportionate level of political and economic power over stakeholders (community members and workers), and who are largely responsible for driving environmental degradation.
2. See the US Department of Defense Fiscal Year 2012 Budget Request for a thorough report on the costs of the military, and its relations with the state and the private economic sector. Available from: <http://comptroller.defense.gov/budget.html>
3. I use this term to connote the institutional form of the confluence between the state, military, and economy. Specifically, I see the military-industrial complex as a set of fluid relationships whereby the military has accentuated autonomy from citizen control due to its variable alliances with political and economic elites whose interests are often served by war-making.
4. The state may often work with economic elites to achieve geopolitical ends. While I agree with Tilly (1990) that the state cannot be reduced to capitalism, elite theories help to shed an agentic light on the complex relations between the organisational logic of economic and state institutions and the actors contained within.
5. My argument is *not* that the military is wholly distinct from the state. In fact, the military legitimates the functions of the state by monopolising the means of

coercion. Rather, my *analytical* intent is to show how there are often disagreements/ conflicts between the goals of the economic, political, and military elites who make up these institutions. This becomes especially pronounced when those suffering environmental inequalities target their grievances at different elites. Given that the military is the strong-arm of the state (i.e. within the domain of the state), the cases reveal in different ways how the treadmill of destruction and the treadmill of production support one another in securing access to raw materials, economic resources, and land that amplify elite power.

6. For a history of how uranium mining led to environmental and economic problems for the Navajo, see Churchill (2002), Kuletz (1998), and SRIC (2007).
7. See Fischer (2000) for a thorough treatment on the politics of citizen–expert knowledge contests.
8. For a treatment on how the state and corporations wield power to co-opt expert scientific knowledge in contested illness struggles, see Cable *et al.* (2008).

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