INDIAN OCEAN

Middle Island
East Island
Spur Reef
Barton Pass
Barton Point
Observatory Point
Main Pass
Orient Bay
Eclipse Point
Eclipse Bay
turning basin
anchorage area
Marianne Point
Rambler Bay
East Point

Entangled
Geographies

Empire and
Technopolitics
in the Global
Cold War

edited by Gabrielle Hecht

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Contents

1 Introduction

Gabrielle Hecht

From its earliest days, the Cold War proceeded in uneasy tension with empire. Tensions ran through global disputes over politics, economics, society, and culture. They were also enacted in struggles over technology. Technological systems and expertise offered less visible—but sometimes more powerful—means of shaping or reshaping political rule, economic arrangements, social relationships, and cultural forms. This volume explores how Cold War politics, imperialism, and disputes over decolonization became entangled in technologies, and considers the legacies of those entanglements for today's global (dis)order.

Our project began with an effort to see what insights three domains of scholarship might offer each other:

1. The anthropology and history of development. Scholars have explored the Cold War roots of modernization theory, development economics, and related social science knowledge, revealed the construction of development, poverty, and illness within international agencies, and conducted deep ethnographic and historical inquiries into development projects.[1]

2. Diplomatic history. Moving beyond the minutiae of superpower relations, this field has morphed into "the new international history." Scholars now pursue a global understanding of the Cold War, search for local perspectives on "proxy" wars, examine the dialectics between foreign policy and domestic racial practices in Western nations, and delve into connections between decolonization and Cold War imperatives.[2]

3. Science and technology studies (STS). This multidisciplinary field has largely separated analysis of the Cold War from the study of colonialism. STS scholars have examined how Western and Soviet technoscientific projects shaped Cold War politics and culture, Meanwhile, STS explorations of colonialism—focusing mainly on the period prior to 1940—have analyzed the roles of science, technology, and medicine in colonial practices and structures.[3]

For the most part, these three domains have flourished independently of each other. "Development," "the Cold War," and "technology" have been examined—separately—as entities whose meanings and practices are contested, negotiated, and historical. Scholars who unpack "development" have tended to treat technology as an exogenous force whose ideology might be critiqued but whose material form remains largely unexamined. They historicize "the Third World," rightly locating its invention in a longer historical trajectory but implicitly treating the Cold War as a stable referent—as simply the latest ideological motivation for modernization, rather than as an entity whose specificities are worthy of dissection. In the process, "the Second World" has dropped out of their analyses (or, more to the point, was rarely there to begin with). Scholars of international history, meanwhile, have engaged with the Cold War inflections of modernization theory and development projects, but they tend to focus on moments and places of conception rather than on zones of application. In both literatures, the result is that technology—when it appears at all—looks flat.[4] Put another way, technology seems merely a tool of politics, rather than a mode of politics.

STS, meanwhile, has devoted a great deal of effort to exactly this issue, exploring technology and science as multi-dimensional forms of politics (and culture, and other social forms). Yet to date, when it comes to topics specific to the Cold War, STS scholars have focused on flashy flagships: nuclear weapons, space exploration, computerized command and control. They have shown, for example, how the design of missile guidance systems, computers, and satellites—far from following an internal technological logic—expressed and shaped superpower grand strategy and Cold War culture. Taking such technologies as starting points, however, has made it difficult to stretch geographically—not because these systems don't extend elsewhere, but because the richness of metropolitan archives, the fascination with hegemonies, and the seduction of revealing the hidden politics lurking in large systems all make it seem as though the most important stories remain grounded in the superpowers and in Europe.[5]

All research proceeds by unpacking some processes while holding others constant. Today, the very depth made possible by these various exclusions enables scholars to connect technology, empire, and the Cold War in new ways. Consider, among other examples, Timothy Mitchell's probe into the regional, national, and global technopolitics that shaped modern Egypt; or Michael Adas's exploration of the technological dimensions of American imperialism before, during, and after the Cold War; or Nick Cullather's analysis of the spatial arrangements and narratives enacted by Green

Revolution technologies. By mapping the projection and the practice of power in new ways, these scholars and others force us to reconsider the legacies of the Cold War and of decolonization and their interactions.[6]

This essay collection builds on such efforts to "deprovincialize" the Cold War. How, we ask, did Cold War and postcolonial imaginaries—each with claims to global purview—shape material assemblages? How did such assemblages fuse technology and politics? What strategic—and what unexpected—forms of power did they enact?

Underlying much of our analysis is the notion of technopolitics, a concept that captures the hybrid forms of power embedded in technological artifacts, systems, and practices. In my book on French nuclear power, I used the term to describe the strategic practice of designing or using technology to enact political goals. Such practices, I argued, were not simply politics by another name; they produced systems whose design features mattered fundamentally to their success and shaped the ways in which those systems acted upon the world.[7] Similarly, in describing the rule of experts in twentieth-century Egypt, Timothy Mitchell uses the term "techno-politics" to emphasize the unpredictable power effects of technical assemblages— that is, the unintentional effects of the (re)distribution of agency that they enacted. These two usages are compatible, and this volume embraces both in order to explore a range of ways in which technologies become peculiar forms of politics. Intentions matter, but they are not determinative. The material qualities of technopolitical systems shape the texture and the effects of their power. Technologies can also, however, exceed or escape the intentions of system designers. Material things can be more flexible—and more unpredictable—than their builders realize. The allure of technopolitical strategies is the displacement of power onto technical things, a displacement that designers and politicians sometimes hope to make permanent. But the very material properties of technopolitical assemblages—the way they reshape landscapes, for example, or their capacity to give or take life— sometimes offers other actors an unforeseen purchase on power by providing unexpected means for them to act.[8] Some of us in this volume focus directly on technopolitical practices, while others treat technopolitics more as a heuristic backdrop. Either way, we want to draw attention to how the material properties of technologies shaped the exercise of political power in the second half of the twentieth century.

In most accounts, atomic bombs are the defining technology of the Cold War. The Swedish writer Sven Lindqvist observes, however, that Cold War nuclear imaginaries descended directly from the colonial warfare of earlier eras. For centuries, Europeans had maintained that different moral

structures underlay the rules of war for battles between "civilized" nations and conflicts with "savages." In twentieth-century empires, aerial bombs joined machine guns as tools of extermination. Even as ecstatic prophets proclaimed the airplane's ability to ensure world peace, the British experimented with strategic bombing in Baghdad and the French bombarded Damascus. So perhaps it was inevitable that atomic energy (and other late-twentieth-century tools of war) should follow suit. At one stage, Lindqvist invites us into the creepy prescience of a 1920s German science-fiction novel:

Should atomic power remain in the hands of whites? Or should we share our secret with the peoples of the world? . . . A world conference is convened to settle the question. . . . Licenses should be issued only to dependable people, and only for economic purposes. But immediately voices are raised, accusing Europe of wanting to use atomic power for imperialistic purposes. The conflicts seem endless.

"They will never stop," says Professor Isenbrandt [an atomic physicist]. "The gulf between the races is too great. No bridge can cross it." . . .

Quite right: one day some black miners in South Africa gang up on a smaller group of whites and drive them away "for a trifling reason." . . . In Algeria, in Tunisia, wherever blacks are working for European companies, the flag of revolt is raised. The whites are defeated by overwhelming black masses. Then the message arrives that the Chinese are on the move. All the colored races unite under the leadership of the Chinese against the whites.

Then Isenbrandt explodes his superweapon over the Mongolian masses. "He watched the magnificent spectacle, his work, with the joy of the master. He was the one who had freed the element and bent it to his will. Even now he was filled entirely with the great task of acting as the protector and savior of the threatened colonies."

"It was wrong," he says sharply, "when our prophets of the past promised the same rights to everyone in the world. Now everywhere on earth the black, brown, and yellow races are calling for freedom. . . . Woe betide us if we grant it! Our power and even our existence would soon be at an end.

The superweapon will be the white race's, and thus humanity's, salvation. For "only the pure white race can fulfill the task it has been given."[9]

Two decades later, in a Pacific war fraught with racial overtones,[10] several hundred thousand Japanese became the first victims of the "white superweapon." While the Atomic Bomb Casualty Commission industriously erected colonial scientific structures to study the aftermath,[11] the United States, Britain, and France scoured colonies in Africa and elsewhere in a desperate bid to monopolize the magic stuff new stuff of geopolitical power: uranium. "Black miners in South Africa" would be among those who dug it up.[12] Once the weapons were built, the imperial cycle began anew, with

atomic bombing—more palatably referred to as "nuclear testing"—of the Marshall Islands, the Sahara, the Navajo Nation, Maralinga, Moruroa, and other colonized spaces.

Nuclear weapons were not the only threads that entangled the Cold War with empire, however. In 1949 US President Harry Truman famously presented his Point Four Program, articulating a vision of how technological progress would help poor "peace-loving peoples" transcend colonialism via capitalist democratization rather than socialist revolution. Yet in practice, much of US foreign policy through the 1950s explicitly supported the maintenance of European empires, delaying decolonization.[13] Meanwhile, the rapidly declining European empires feared that US technological dominance constituted a new form of imperialism, of which they would soon find themselves subjects rather than masters.[14]

At the heart of these (post)colonial Cold War entanglements lay a refiguring of global technopolitical geographies. The "new imperialism" of the nineteenth and twentieth centuries had found legitimation in ideologies that measured human advancement by achievements in industrial technologies and Western scientific and medical practices.[15] Cold War thought and practice turned such justifications into a futurist vision. Prominent Western intellectuals and strategists argued that democracy and technology could work together to offer a fundamentally non-ideological mode of action. Capitalist modernization theory posited that, with the right sort of assistance, any human society could climb the ladder of progress: on each successive rung, industrialization and democratization would proceed hand in hand.[16] The Soviet vision offered a development path that led to socialism through (often large-scale) industrialization. Apart from its rejection of the "free market," however, the Soviet model of progress differed little from the Western one.[17] Through their claims to modernity, both capitalism and communism proclaimed the power to provide rational means of explaining and transcending global inequalities. In both cases, the very claim to rationality depended on an imperial objectification that lumped emerging nations together under the rubric of "underdevelopment."[18]

Both flavors of developmentalism often escaped the boundaries imagined by their promoters. Both would prove seductive for nationalist leaders elsewhere in the world, particularly when accompanied by promises of material and military assistance. Elites in decolonizing nations understood the power of technopolitics, not just in the global pecking order, but also within their new nations. For example, Indian leaders challenged "First World" ownership of nuclear things by proclaiming nuclear development to be a fundamental building block of India's postcolonial national

identity.[19] Indonesian officials seeking technical aid for agricultural development resisted the economic models inspired by US Cold War imperatives in favor of their own national and nationalist economic agendas.[20] In Senegal, the state sought to break with a colonial geography of production and export, refiguring national space into development zones, and thus was able to engage in totalizing infrastructural, educational, and production projects.[21]

Even as the "darker nations" affirmed independent historical trajectories—even as their leaders formulated the Third World project[22]—development schemes formed the infrastructure of global entanglements. The establishment of the Non-Aligned Movement did not obviate the Cold War in the South, though it certainly shaped its meanings and power. Technological exchanges between those fully committed to the superpower struggle and those who sought to combat its hegemony made the Cold War inescapable. Sometimes, though, the blind, blundering logic of the Cold War could be subverted or inverted via the very technologies to which it laid claim. Development—in all its multiple meanings and practices—offered post-colonial leaders routes to power not foreseen by Cold Warriors.

Our essays sketch how Cold War ideological struggles, decolonization, postcolonial nation building, and new (or refashioned) imperial projections became entangled in technopolitical projects and practices. The volume as a whole thus contributes to the historiography of what Odd Arne Westad and others have called "the global Cold War." This phrase gestures toward the many relationships among the superpower struggle, decolonization, global inequalities, and imperial difference. The research sites we have chosen—India, Brazil, Saudi Arabia, and South Africa, among others—implicitly align us with Westad's conclusion that "the most important aspects of the Cold War were neither military nor strategic, nor Europe-centered, but connected to political and social development in the Third World."[23] Critics have noted that this formulation forces an unnecessary choice, and that the "Third World's" importance in the Cold War does not obviate that of the superpowers. Clearly, the Cold War's technopolitical legacy remains strong in the North's military-industrial complex, in the structures of its universities and their scientific research, in the enduring environmental and social impacts of weapons production, and so on. While we agree with these critics, we also appreciate Westad's insistence on distributing the political history of the Cold War more widely. His stand serves as a stage for our discussion of its technopolitical history.

We had debates and disagreements along the way, most notably around the notion of (global) Cold War itself. Do we take this as merely a temporal

label, and lump everything that happened between the end of World War II and the fall of the Berlin Wall into this slot? Clapperton Mavhunga argues that this forced alignment would deny historical agency to much of the colonial and postcolonial world. Itty Abraham similarly notes that regional histories follow cadences of their own, whose contingencies would be lost if we surrendered to a periodization dictated by the superpowers' hegemonic fantasies. We have thus tried, in a variety of ways, to hold different historical temporalities in tension. The related move of taking the Cold War merely as an etic category (of historical analysis) poses parallel problems. Ruth Oldenziel, Martha Lampland, and Peter Redfield show how this can create a false sense of rupture: an implicit argument that everything changed when the Cold War began, and changed again when it ended. Cold War technopolitics were not created from scratch in response to superpower tensions and the division of Europe. Perhaps paradoxically, understanding their longer histories helps to explain their power, and helps to deprovincialize the Cold War both temporally and spatially. In the end, many of us attend to the Cold War as an emic category, seeking to make visible how historical actors understood, invoked, or deployed it: as legitimation, resource, rupture-talk, organizational logic, or object of contestation.

Our collection trains a technopolitical lens on the Cold War while simultaneously attending to multiple spatial, temporal, and political scales: global, transnational, international, imperial, colonial, postcolonial, national, regional, local. Each essay traces different entanglements among scales. Some of the geographies we outline are centered in places typically considered peripheral to the Cold War. Others suggest alternative maps of polities and technologies typically considered central. Reaching back to nineteenth-century US territorial practices (and forward to those of Bush-era war-making), Ruth Oldenziel rethinks American geography in technopolitical terms. Cold War America, she insists, extended well beyond the continental mainland and European bases and allies: it was technologically distributed in—and dependent upon—islands scattered over the globe. Cold War logic, nuclear and otherwise, imagined these islands as empty. Attending to the forced evacuations that enabled this illusion and its attendant fantasy of a non-imperial US, Oldenziel invites us to contemplate the labor geographies and technological systems that underwrote America's global Cold War thrust.

Nationalisms powered or reinvigorated by nuclear weapons obscured the colonial relationships necessary to their existence. Nuclear states mined their fuel in colonized territories and tested their bombs in imperial waters. My essay suggests how agencies and treaties that sought to define the

global nuclear order, such as the International Atomic Energy Agency and the Nuclear Non-Proliferation Treaty, claimed to temper Cold War moral injunctions with postcolonial ones. Yet the specter of planetary destruction conveyed a certain temporal and material urgency that could serve as a powerful trump. The nuclear imperatives that drove the permanent removal of Kwajalein residents, discussed in Oldenziel's essay, also supported South Africa's efforts to build international legitimacy while remaining the West's last colonial power. Portraying nuclear development, "the market," and their relationship as apolitical terrains unsuited for anti-colonial claims-making, the apartheid state crafted commercial circuits that entangled its uranium with American, European, and Japanese nuclear systems. I argue that such entanglements reverberate into the present.

Even during the Cold War, nuclear technopolitics sometimes took unexpected turns. Itty Abraham suggests that in the struggle over the decolonization of the Indian subcontinent, the presence of radioactive thorium in the sands of Travancore ended up subverting—rather than supporting—the possibility of that state's independence from India. Much as Frederick Cooper has argued that Africa's current nation-states were not the only option for the political organization of the continent at the moment of decolonization, Abraham shows that the possibility of Travancore's statehood was very real, thanks to thorium. Only later did the Indian atomic leadership's appropriation of the rare earth cut off that possibility. Sonja Schmid turns her gaze on relationships between the Soviet Union and East Germany and Czechoslovakia, analyzing the Soviet transfer of nuclear power and expertise to these countries as uneven colonial practice. The Soviets were reluctant to share their technology, fearing that their technopolitical leverage would be undermined if secrets and materials leaked out. When they eventually did engage in technology transfer, the Soviets sought tight control over the terms of the exchange. India's leaders, it turns out, were not alone in seeing nuclear technology as a motor for nation-building; so too did Eastern European leaders. They deployed socialist ideologies of progress to argue for ever-greater access while also developing indigenous expertise. Ultimately, Schmid shows, the strategy to refashion Soviet-supplied power plants into instruments of nuclear nationalism—and political and economic power—met with very different fates in East Germany and Czechoslovakia. Both Abraham and Schmid demonstrate how the material dimensions of nuclear things shaped larger political possibilities (without fully determining them).

It was not just in nuclear matters that Cold War technopolitics embodied settlements between the ideals of universality and the inescapability of

locally specific conditions. Donna Mehos and Suzanne Moon tackle this theme head-on in their exploration of portable knowledge. The logic of colonial rule, they argue, privileged place-based knowledge. Decolonization—the formal transfer of sovereignty—destabilized the economic value of such expertise. When political upheaval sent Western corporations packing, agricultural specialists and others who had made their careers in colonial companies had to find ways of delocalizing their knowledge, of making it portable. One result was the emergence of globally oriented consulting companies. But making knowledge portable, Mehos and Moon argue, was more than simply a strategy for economic survival: in the corridors of UN agencies, portable knowledge became central to the technopolitics of internationalism. A central mission of the UN, technical assistance was never just about the aid itself; it was also, always, a gesture toward transcending Cold War politics. This dynamic played out in the composition and the practices of aid teams. In a bizarre twist, some construed subalternity itself as a universalizing epistemology, so that an expert from Haiti was thought to have privileged insight into a project in Afghanistan simply by virtue of having witnessed poverty first-hand. Martha Lampland echoes this theme in her analysis of state planning and development economics. She treats these bodies of expertise as scientific instruments and forms of technopolitics, which slipped across the grand divide between capitalism and communism both before and during the Cold War. The planners who managed Hungary's transition to socialism had acquired their expertise by developing scientific management and economic theory in the interwar period. Their technopolitics camouflaged the capitalist antecedents of the practices they used to build a socialist state. Attending to state planning as technopolitics, Lampland concludes, makes visible the parallels between Second World and Third World state-building.

As instruments of rule that distributed agency across material assemblages, technopolitical strategies certainly proved seductive to many who aspired to state-building. We see this time and again in these essays, from Sir C. P. Ramaswamy Aiyar in Travancore to Haile Selassie in Ethiopia; from apartheid leaders in South Africa to Robert Mugabe in Zimbabwe; from the ministries of the Saudi kingdom to the air-borne fantasies of Brasilia. Inverting the perspective offered by Oldenziel, Lars Denicke considers globalized Cold War geographies from the standpoint of Brazil, a potential node in the planetary networks formed by air travel. Brazilian leaders hoped the technologies of flight (not just airplanes, but also airports) would allow them to claim stakes in Cold War geopolitics. This possibility provided the inspiration for re-mapping the nation-space to make a new capital and a

new modernity. Reshaping territory, hope for a new place (both spatial and political) in a new world order: these certainly contributed to the seduction of technopolitical strategies. But, as other authors show, so did the displacement and redistribution of power. By turning the social and political difficulties of rule into problems of resource and labor management, statemakers hoped to neutralize dissent.

Reshaping technopolitical geographies could have unpredictable effects—consequences not necessarily inscribed in the design of systems or readily apparent in the territorial rearrangements they enacted. Toby Jones argues that the technopolitical gesture itself—the attempt to sublimate social difference via the al-Hasa irrigation project—helped to catalyze Shi'i dissent and led to the 1979 rebellion whose story frames his essay. The Saudi state may have found resources for rule lurking in Cold War dynamics, but the subjects of rule understood this gesture all too well. Their dissent drew vigor not just from the material devastation of the irrigation system, but also from the Cold War alliances on display in the project. Freedom fighters in late colonial Rhodesia, meanwhile, were no mere pawns of Sino-Soviet power. Adopting an expansive understanding of "weaponry," Clapperton Mavhunga argues that nationalists inverted the technologies and rhetorics provided in the name of the Cold War to their own ends, to engineer Zimbabwe out of the infrastructure and detritus of colonialism. Nationhood, he emphasizes, was just the beginning: as president, Robert Mugabe continues to reconfigure these tools and rhetorics to violently consolidate his power.

Finally, lest we feel overly tempted to scoff at the hubris of experts, Peter Redfield reminds us of the virtues of displaced, materialized, portable expertise—while not losing sight of its limits. His discussion of Médecins sans Frontières signals the significance of portable medical kits in coping with the violence engendered by, during, and after the Cold War. The kits distributed expertise, experience, and an ethics of global intervention into technical assemblages, ready to expedite at a moment's notice. Such portability, however, constituted merely a technopolitics of emergency: a momentary intervention, rather than a permanent solution to political violence.

For many Americans, the final death knell of the Cold War was sounded not by glasnost, or the fall of the Berlin Wall, or even the formal dismantling of the Soviet Union, but rather by the explosions of September 11, 2001. US Secretary of State Colin Powell called the moment the post-post-Cold War: rupture squared. In the moment of tragedy, calling attention to the ironies and continuities represented by the attacks (that the attackers exploited weaknesses inherent in American technological systems, that

they had learned to fly in American flight schools, that they had learned terror tactics in camps instituted by the United States during the Soviet-driven Afghan war) seemed tantamount to treason. The authors in this volume, however, suggest that if we are indeed in a post- or a post-post-Cold War world, then it's the same kind of "post-ness" that we find in the "post-colonial." In other words, the infrastructures and discourses of global Cold War technopolitics continue to shape the possibilities and limits of power, just as the infrastructures and discourses of empire do. Technopolitical assemblages are not static. By enacting historical and geographical entanglements, they continually generate new effects and new meanings. This book excavates the roots of these technopolitical entanglements in the hope of better understanding their power and their peril.

Notes

1. Cooper and Packard 1997; Cooper and Stoler 1997; Escobar 1994; Ferguson 1990; Gupta 1998; Scott 1998.

2. Among many examples: Borstelmann 2001; Connelly 2002; Westad 2005; Von Eschen 1997.

3. For the first mode, see Collins 2002; Edwards 1996; Krige 2006; Leslie 1993; Lowen 1997; Wang 1999. For historiographic overviews of works on science, technology, and empire, see Arnold 2005; McLeod 2000.

4. Some of the contributions in Ong and Collier 2005 offer exceptions to this observation, but they are concerned more with present-day "globalization" than with the longer historical moment surrounding the Cold War.

5. Though not impossible: see Hecht and Edwards 2008.

6. Abraham 1995; Adas 2005; Connelly 2008; Cullather 2004; Hecht 2006a; Leslie and Kargon 2006; Mitchell 2002; Moon 2007; van Oosterhout 2008.

7. Hecht 1998/2009.

8. The relationship between technology and political power is an old and important theme in historical and social analysis, dating back at least as far as Karl Marx's discussions of means of production as a controlling factor in political economy and continuing on into the twentieth century with public intellectuals such as Lewis Mumford and Jacques Ellul. The modern field of Science and Technology Studies has vastly expanded and deepened such reflections. Landmark studies include (among many others) Bijker et al. 1987, Hughes 1983, MacKenzie 1990, and Winner 1986.

9. Plot summary of Hans Dominik's *The Trail of Genghis Khan, A Novel of the 21st Century* in Lindqvist 2001, section 128.

10. Dower 1987.

11. Lindee 1994.

12. Hecht 2009.

13. Borstelmann 2001; McNay 2001.

14. Kuisel 1993; de Grazia 2005; Krige 2006.

15. Adas 1989.

16. Latham 2000; Gilman 2003; Engerman et al. 2003; Engel 2007.

17. Adas 2005; Westad 2005.

18. Cooper 2005; Cooper and Packard 1997; Escobar 1995; Mitchell 2002.

19. Abraham 1998.

20. Moon 1998.

21. Diouf 1997.

22. Prashad 2007.

23. Westad 2005: 396. A similar argument, albeit with different empirical emphasis, lies at the core of Mamdani 2004.