STRATEGIC ENVIRONMENTS: MILITARISM AND THE CONTOURS OF COLD WAR AMERICA

by

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Abstract

This thesis traces the relationship between militarism and geographical thought in the United States during the early Cold War. It does so by traveling across certain spaces, or environments, which preoccupied American geopolitics and American science during the 1940s and 1950s. Indeed, geopolitics and science, understood during the Second World War as markedly distinct terms, came together uniquely to wage the Cold War from the position of strategy. The most intriguing and influential conjunctions were made possible by militarism, not in the deterministic sense of conditioning technologies or funding lines, but as a result of antagonistic, violent practices pervading American life. These practices reaffirmed America's status as distinctly, powerfully modern, while shoring up the burden of global responsibility that appeared to accompany this preeminence. Through militarist reasoning, the American world was turned into an object that needed securing – resulting in a profoundly insecure proliferation of danger that demanded an equal measure of global action and retreat behind new lines of defence. And in these American spaces, whether expanded or compressed, the identity of America itself was defined.

From the global horizons of air power and the regional divisions of area studies to the laboratories of continental and civil defence research, the spaces of the American Cold War were material, in the sense that militarism's reach was clearly felt on innumerable human and natural landscapes, not least within the United States. Equally, however, these environments were the product of imaginative geographies, perceptual and representational techniques that inscribed borders, defined hierarchies, and framed populations governmentally. Such conceptions of space were similarly militarist, not

least because they drew from the innovations of Second World War social science to reframe the outlines of a Cold War world. Militarism's methods redefined geographical thought and its spaces, prioritizing certain locations and conventions while marginalizing others.

Strategic studies formed a key component of the social sciences emboldened by the successes and excesses of wartime science. As social scientists grappled with the contradictions of mid-century modernity, most retreated behind the formidable theories of their more accomplished academic relatives, and many moved into the laboratories previously associated with these same intellectual stalwarts. The result was that at every scale, geography was increasingly simulated, a habit that paralleled the abstractions concurrently promoted in the name of political decisiveness. But simulation also meant that Cold War spaces were more than the product of intangible musings; they were constructed, and in the process acquired solidity but also simplicity. It was in the fashioning of artificial environments that the fragility of strategy was revealed most fully, but also where militarism's power could be most clearly expressed. The term associated with this paradoxical condition was 'frontier', a zone of fragile, transformational activity. Enthusiastic Cold Warriors were fond of transferring this word from a geopolitical past to a scientific future. But in their present, frontiers possessed the characteristics of both.

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List of Abbreviations

AAG	Association of American Geographers
ADSEC	Air Defense Systems Evaluation Committee
ADTIC	Arctic-Desert-Tropic Information Center
AEC	Atomic Energy Commission
AGS	American Geographical Society
AINA	Arctic Institute of North America
ASPG	American Society for Professional Geographers
ASTP	Army Specialized Training Program
BASR	Bureau of Applied Social Research, Columbia University
CATP	Civil Affairs Training Program
CCS	Cross-Cultural Survey, Yale University
CENIS	Center for International Studies, MIT
CIMA	Coordinated Investigation of Micronesian Anthropology
DEW	Distant Early Warning (Line)
DRB	Defence Research Board (Canada)
FCDA	Federal Civil Defense Administration
GOC	Ground Observer Corps
HRAF	Human Relations Area Files
HRRI	Human Resources Research Institute, Air University, Alabama
IGY	International Geophysical Year (1957-58)
IIS	Institute of International Studies, Yale University
JANIS	Joint Army-Navy Intelligence Studies
NIS	National Intelligence Surveys, Central Intelligence Agency
NRC	National Research Council
NSRB	National Security Resources Board
ONR	Office of Naval Research
OSS	Office of Strategic Services
OWI	Office of War Information
R&A	Research and Analysis Branch, Office of Strategic Services
RDB	Research and Development Board
RRC	Russian Research Center, Harvard University
SAGE	Semi-Automatic Ground Environment
SDC	System Development Corporation
SORO	Special Operations Research Office, American University
SRL	Systems Research Laboratory (RAND Corporation)
SSRC	Social Science Research Council
USIA	United States Information Agency
USSBS	United States Strategic Bombing Survey

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A whole history remains to be written of *spaces* – which would at the same time be the history of *powers* (both these terms in the plural) – from the great strategies of geo-politics to the little tactics of the habitat…

- Michel Foucault, "The Eye of Power"

Introduction

In the summer of 1959, just before a trip to the Soviet Union, American Vice-President Richard Nixon and his family joined Rear Admiral Charles C. Kirkpatrick of the U.S. Navy on the first voyage of the largest 'atomic' submarine fleet in the world. The tour took the distinguished guests past a graveyard of sunken ships, and led one exuberant reporter for the *Christian Science Monitor* to exclaim that the spectacle was "sheer fun, as though the real purpose of technological achievement, after all, was human happiness." Although the submarine project had been blessed by the U.S. government and aided by General Dynamics, a builder of nuclear reactors, the purveyor of these amusements was not the American military, but Walt Disney. The site was the celebratory Tomorrowland section of Disneyland, the "Magic Kingdom" that had opened in 1955. "Tomorrowland" was also a segment of Disney's popular television program, and in 1957 the show aired a feature titled "Our Friend the Atom," a combination of live-action and animation, sponsored by General Dynamics, that was a promotional vehicle for President Dwight D. Eisenhower's "Atoms for Peace" campaign. Released as a film in 1958, "Our Friend" explained atomic energy in the terms of household technology, domesticating a science that was more commonly associated with destructive weaponry. This soothing function was exactly what Eisenhower intended, as he came under increased domestic and international pressure to limit atomic testing.[1]

Walt Disney, the journalist Eric Schlosser has argued, was

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[1] Mark Langer, "Disney's Atomic Fleet," *Animation World Magazine* 3.1 (1998), www.awn.com/mag/issue3.1/3.1pages/3.1langerdisney.html (December 15, 2002); Lawrence S. Wittner, *The Struggle Against the Bomb, Volume Two: Rebels Against the Bomb* (Stanford: Stanford University Press, 1993). For an early statement of atomic enthusiasm, see R. M. Langer, "Fast New World," *Collier's* (July 6, 1940), pp. 18-19, 54-55.

> America's most popular exponent of Cold War science. For audiences living in fear of nuclear annihilation, Walt Disney became a source of reassurance, making the latest technical advances seem marvelous and exciting. His faith in the goodness of American technology was succinctly expressed by the title of a film that the Disney studio produced for Westinghouse Electric: *The Dawn of Better Living*.

But Disney was also deeply interested in propaganda, and his scientific promotions were thus explicitly political. He enlisted former Nazi scientists Wernher von Braun and Heinz Haber, who were advising the United States Air Force, to work on space-oriented television programs and the design of Tomorrowland. Haber was an alumnus of the Luftwaffe Institute for Aviation Medicine, where he experimented on Dachau inmates, and eventually became the "chief scientific advisor to Disney Productions." He also hosted "Our Friend the Atom" and wrote the companion children's book.[2]

In 1940, Disney began reporting on Hollywood personalities for the Federal Bureau of Investigation, and did so obsessively. His opposition to organized labour in the film industry, his affection for J. Edgar Hoover (a "foster father"), his affiliations with organized crime, and his anti-Semitism are all well known. His relationship with the military was somewhat more contentious. After accepting a contract from the Naval Bureau of Aeronautics for twenty animated training films, Disney grew annoyed with interference from Washington that attempted to use his stock characters in what he believed to be inappropriate ways. Once freed from a formal military presence in his studio, Disney chose a project that resembled his popular propaganda films, but one that he could control completely. This was an animated version of Alexander De Seversky's prominent 1942 book *Victory Through Air Power*. Although Disney's adaptation was not successful in the United States, it found devotees across the Atlantic, where Winston

Churchill apparently used the film to convince Franklin Roosevelt that long-range bombing was an appropriate strategic measure.[3]

In this Disney story lie the elements that bind this dissertation together. The conflation of geopolitics and science, set within a rich, if eccentric, cultural landscape, suggests that a productive (if sometimes contradictory) constellation may be brought into view by examining these commonly compartmentalized terms and their spatial histories together. Geopolitics has recently come under critical scrutiny for its representational presumptions, while other scholars have begun to consider the traffic between scientific work, or knowledge, and what is conventionally presumed to lie external to such domains. Both of these important revisionist approaches adopt a loosely cultural approach in the sense that they reject an essential definition of what geopolitics or science 'is', concentrating instead on the *practices* through which "understanding is articulated and maintained in specific cultural contexts and translated and extended into new contexts."[4]

But in the terms of contemporary Geography and International Relations, the Cold War is fast assuming a presence that verges on certainty. Now perceived, and set off, from another present, it is solidifying in time and space, as sets of dates and periods, on the one hand, and lists of blocs, alliances, and rivalries, on the other. This historical and geographical coagulation has been distinctly advanced by the study of a *post*-Cold War era and its dimensions. A new world of proliferating insecurities appears to require

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[2] Eric Schlosser: *Fast Food Nation: The Dark Side of the All-American Meal* (New York: HarperCollins, 2001), pp. 38-39; Heinz Haber, *The Walt Disney Story of Our Friend the Atom* (New York: Simon and Schuster, 1956).
[3] Marc Eliot, *Walt Disney: Hollywood's Dark Prince* (New York: Carol, 1993), pp. xvii-xviii, 165-168; Alexander P. de Seversky, *Victory Through Air Power* (New York: Simon and Schuster, 1942).
[4] Joseph Rouse, *Engaging Science: How to Understand its Practices Philosophically* (Ithaca: Cornell University Press, 1996), p. 238.

the innovations of post-structuralism, post-colonialism, and related approaches to account for its shifting and deterritorialized alignments. All of this is quite exhilarating, and, in the nebulous forms of critical geopolitics, for instance, has introduced a welcome, challenging reflexivity to studies of political spaces, drawing valuable connections to cultural studies, political theory, and other interdisciplinary fields of inquiry. There is, undoubtedly, a need to move beyond the overarching metanarrative of a singular Cold War, explained solely through a series of infinitely mobile terms such as 'containment' and 'domino'. But the mutual dependence on theory and a presentist perspective is a hazardous habit. It risks suggesting that the Cold War has been resigned to the rigidity of a historical *epoch*, characterized by a wholly different order of things, including a secure, simple superpower competition that is made to seem positively, unquestionably realist in comparison to current vertigo.

Paradoxically, this framing of the Cold War has been both aided and challenged by the rush of detail that has flooded historical literature as a result of declassification, including material from the former Soviet archives. To answer the question of whether these novelties have resulted in a greater certainty or a heightened, even contradictory complexity is to stake a preliminary position in the substantial realm of Cold War scholarship. Such intellectual differences are matched, intriguingly, by the Cold War itself; the stark boundaries of struggle were contested by the very technologies and ideological categories that were used to erect and maintain them.[5] But an awareness of this contradiction is limited by a simplistic approach to the geographies of 'Cold War'.

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[5] Christian G. Appy, "Introduction: The Struggle for the World," in Appy, ed., *Cold War Constructions: The Political Culture of United States Imperialism, 1945-1966* (Amherst: The University of Massachusetts Press, 2000), pp. 1-8; Tom Englehardt, *The End of Victory Culture: Cold War America and the Disillusioning of a Generation* (New York: Basic Books, 1995).

Many recent interpretations of American history, some brilliant, that explicitly take the Cold War or parts of it as a period of explanation all too often fail to account for the spatial assumptions built not only into their own reconstructions, but also into the slice of time which they purport to study.

What is required to skirt these pitfalls is an approach that is not bounded by disciplinary constraints, heroic biographies, or instrumental depictions of policy, and yet considers the importance of intellectual categories, influential individuals, and the exercise of power. This was, I think, what Michel Foucault had in mind in his discussions of *spatial history* – a phrase that he never used formally, but gestured to across the entire corpus of his work. His histories of limits, boundaries, and enclosures were addressed through the themes of illness, crime, and sexuality, but also militarism. In a renowned passage from a dialogue with the editors of the French geopolitical journal *Hérodote*, Foucault concluded that

> the formation of discourses and the genealogy of knowledge need to be analysed, not in terms of types of consciousness, modes of perception and forms of ideology, but in terms of tactics and strategies of power. Tactics and strategies deployed through implantations, distributions, demarcations, control of territories and organizations of domains which could well make up a sort of geopolitics...[6]

In 1976, the same year as the Foucault interview, Yves Lacoste, one of *Hérodote*'s founders, argued similarly that geography was "first and foremost a strategic knowledge which is closely linked to a set of political and military practices." Both Lacoste and Foucault were advancing an expansive version of geography that was tied

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[6] Michel Foucault, "Questions on Geography," in Colin Gordon, ed., *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977* (New York; Pantheon, 1980), pp. 63-77; the quote is from p. 77. For the most extended treatment of 'spatial history', see Stuart Elden, *Mapping the Present: Heidegger, Foucault, and the Project of a Spatial History* (London: Continuum, 2001). Militarism, of course, has also attracted its share of treatments in historical sociology. For one prominent example, see Anthony Giddens, *The Nation-State and Violence: Volume Two of a Contemporary Critique of Historical Materialism* (Cambridge: Polity, 1985).

only partially to forms of academic knowledge. In a less heralded passage from the same conversation, Foucault mentioned a research project he was planning to undertake that would directly address "the army as a matrix of organization and knowledge." While he never completely fulfilled this goal, Foucault's later writings on governmentality, and his already-published discussions of the military and disciplinary power, were clearly concerned with the broader implications of the same subject. Indeed, for all their differences, both Lacoste and Foucault tied geography to military science, but more importantly, to "a knowledge born out of the practical management problems of government, problems addressing the administration, surveillance and control of populations, territories and colonies."[7]

In his 1975-76 lectures at the Collège de France, Foucault inverted Clausewitz to assert that politics was "the continuation of war by other means," suggested that discourse was a struggle or battle, and proposed that war produces a form of truth which operates as a weapon. His references were drawn overwhelmingly from the early modern period, and little reference was made to his own century, or, for that matter, to the United States. While important, in the sense that the long history of strategy as a specific model of power should not be ignored, these absences, like Foucault's minimal references to colonial contexts, are also unfortunate. This thesis attempts to redress that imbalance by taking up the technologies, discourses, and spaces of American militarism during the period between World War Two and the 1960 election of John F. Kennedy. The choice

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[7] Gearóid Ó Tuathail, "The Critical Reading/Writing of Geopolitics: Re-reading/Writing Wittfogel, Bowman and Lacoste," *Progress in Human Geography* 18.3 (1994), pp. 313-332; the quotes are from pp. 326-327; Foucault, "Questions on Geography," p. 77. On Lacoste and *Hérodote*, see also Paul Claval, "*Hérodote* and the French Left," and Leslie W. Hepple, "*Géopolitiques de Gauche*: Yves Lacoste, *Hérodote*, and French Radical Geopolitics," in Klaus Dodds and David Atkinson, eds., *Geopolitical Traditions: A Century of Geopolitical Thought* (London: Routledge, 2000), pp. 239-267, 268-301. In the

of historical markers is in one sense arbitrary, but it is also a deliberate attempt to address a time of almost unabashed militarism in the United States, a span when the signs, subjects, and structures of violence ran rampant. The Cold War was at once a paradigmatic case of near-perpetual political confrontation and an arena for the control of subjects using techniques derived from the military. In 1953, Edward Barrett actually published a book titled *Truth is Our Weapon* – a popular study of persuasion, propaganda, and psychological warfare.[8]

Specifically, this is a history of *how* certain Cold War environments were conceived and concretized at the conjunction of geopolitics and science. A genealogy of these two terms does not reveal clean distinctions. Indeed, they merged uneasily, but crucially, in the practices of the *social* sciences. In promotional material for the Human Relations Area Files, one of the period's most ambitious attempts to forge a 'science of man', the aims of the social sciences are described as attempts to match, in the study of human affairs, the spectacular successes of science in harnessing, conquering, and coming to terms with nature. But the same publication conceded that there were problems that "mastery of impersonal phenomena" could not completely solve. The excesses of science, moreover, had heightened some of these risks and traumas. Pushing the boundaries of science necessitated a turn inward, to "man himself" and his own complex cultural and behavioural systems.[9] But as in the case of the research dubbed

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large and admirable literature on Foucault's relevance for geography, the connection to militarism and its spaces has not been fully drawn out.

[8] Michel Foucault, *"Society Must Be Defended": Lectures at the Collège de France, 1975-76*, trans. David Macey (New York: Picador, 2003), p. 15; Julian Reid, "Foucault on Clausewitz: Conceptualizing the Relationship Between War and Power," *Alternatives* 28 (2003), pp. 1-28; Mark Neocleous, "Perpetual War, or 'War and War Again': Schmitt, Foucault, Fascism," *Philosophy and Social Criticism* 22.2 (1996), pp. 47-66; Edward Barrett, *Truth is Our Weapon* (New York: Funk and Wagnalls, 1953).

[9] Human Relations Area Files, *Laboratory for the Study of Man: Report 1949-1959* (New Haven: Human Relations Area Files, 1959), p. 3. As Richard Ashley writes, a genealogical attitude permits social inquiry

science, the far reaches of this social inquiry were not merely metaphorical; there was a distinct, material correlation between intellectual and geopolitical frontiers.

The social sciences are pivotal to liberal thought because they construct autonomous objects of knowledge, in the form of social *bodies*, which provide the targets for social administration and regulation – what Foucault called governmentality. Governmental objects were most powerfully constituted by means of quantification, or related methods that allowed for mobility, stability, and synthesis. The modern scale of government is undoubtedly the national state, but to assert this is to risk indulging a tendency to treat the state as rigid and primary.[10] The territories of American geopolitics and science were diverse, just as the spatial meaning of 'America' was not fixed. Put this way, society, in turn, becomes a site for critical scrutiny, rather than an explanatory authority.

In *Truth is Our Weapon*, Barrett was concerned to demonstrate the relevance of ideas in a battle for human minds, and, in a much different register, so am I. What follows is an intellectual history of geographies that is inspired by but emphatically not in the shadow of Foucault's provocations. Moreover, it is not a study of spatial metaphors, but of spatial techniques and spatial knowledge. Moving from the global reach of geopolitics to unhomely urban habitats, I trace the *revision* of the world by American militarism across a series of scales. These levels resemble the lines of a contour map, a cartographic style used frequently during the Cold War to refer to degrees of destruction wrought by atomic bombs. Contours, like scales, are artificial distinctions, but also

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"to find its focus in the posing of 'how' questions, not 'what' questions." Richard K. Ashley, "The Geopolitics of Geopolitical Space: Toward a Critical Social Theory of International Politics," *Alternatives* 12 (1987), pp. 403-434; the quote is from p. 409.

boundaries that imply difference. They are, additionally, relational, tied to one another as part of a classification scheme that takes as its point of origin a central site or zone.[11] In my outline and orientation, this focal space is 'America', at once equivalent to and much more than the territorial expanse of the United States. But unlike the abstract,[12] systemic geometries of Cold War strategy and social science, I am less interested in the specific location of a point, the mathematical justifications for the placement of contours, or the connection of all phenomena to a single principle, than I am in the rich, variegated spaces between each line.

If militarism is understood, somewhat conventionally, as the promotion, prominence, and pervasiveness of military ideas, objects, and values, or the erasure of boundaries (however artificial) between military and civilian spaces and institutions, then the United States during the early Cold War is a capable candidate for the designation, *especially* given America's status as a 'liberal' space. Liberal political thought, haunted by the contradictions of violence and reason, is premised on the attempt to remove disorder from within the boundaries of the state, a project that is doomed to fail. Cold War America is a striking example of that failure. While perhaps not a strict 'garrison state', to use a term that has received recent attention from historians, it may have been

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[10] Matthew G. Hannah, *Governmentality and the Mastery of Territory in Nineteenth-Century America* (Cambridge: Cambridge University Press, 2000).

[11] See Sally A. Marston, "The Social Construction of Scale," *Progress in Human Geography* 24.2 (2000), pp. 219-242. Foucault's non-Cartesian maps, Stuart Elden writes, "highlight key features, outline contours, and provide an orientation." Elden, *Mapping the Present*, p. 115.

[12] All social theory requires abstraction – "a removal, a drawing out from an original location, and an enforced movement of elements from one level to another." But the abstraction I refer to throughout this thesis is mostly closely aligned with positivism, a naturalized doctrine of "pure perception" which does not recognize its own partiality. This abstraction, divorced from a partial and situated viewpoint, is also a license for violence and demonization. Or, as Henri Lefebvre puts it, "[a]bstract space is not homogeneous; it simply has homogeneity as its goal, its orientation, its 'lens'." See Chris Jenks, "The Centrality of the Eye in Western Culture: An Introduction," in Jenks, ed., *Visual Culture* (London: Routledge, 1995), pp. 1-25; the quotes are from pp. 6, 9; Henri Lefebvre, *The Production of Space*, trans. Donald Nicholson-Smith (Oxford UK and Cambridge MA: Blackwell, 1991), p. 287.

one by any other name.[13] In the decade following the Second World War, the Department of Defense became the largest single patron of American scientific research, and also funded the social sciences generously. Government programs such as civil defence militarized the mundane by positioning the nuclear family as a stalwart institution that could shoulder a burden of survival in partnership with the armed forces. Using the authoritative rhetoric of positivism, disaster scholars argued that every city, and every home, was a potential target, while advocating responses that would contain panic and chaos to certain areas in the event of an atomic attack. The idea of America as the insecure space at the heart of a contour map is thus highly appropriate.

Air Force Chief of Staff Hoyt Vandenberg neatly, if unintentionally, captured the ubiquitous spirit of Cold War militarism in a 1953 speech to the Advertising Council of New York. Referring to the recruitment of volunteers for the Ground Observer Corps, the army of civilian 'skywatchers' on alert for signs of Soviet planes, Vandenberg admitted that an appropriate marketing campaign

> meant asking them not merely to be realistic, but to be imaginative; to accept the fact that the nature of war has changed and that because of this change our Nation, at the very moment it has reached a position and influence unparalleled in our history, has become vulnerable as never before. In consequence of this vulnerability, our citizens must now assume responsibilities that are new and strange.[14]

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[13] Paul N. Edwards, "The Army and the Microworld: Computers and the Politics of Gender Identity," *Signs: Journal of Women in Culture and Society* 16.1 (1990), pp. 102-127; Candace Vogler and Patchen Markell, "Introduction: Violence, Redemption, and the Liberal Imagination," *Public Culture* 15.1 (2003), pp. 1-10; David Campbell \ Michael Dillon, "Introduction: The End of Philosophy and the End of International Relations," in Campbell \ Dillon, eds., *The Political Subject of Violence* (Manchester: Manchester University Press, 1993), pp. 1-47; Michael Sherry, "A Hidden-Hand Garrison State?" *Diplomatic History* 27.1 (2003), pp. 163-166. Sherry is reviewing Aaron Friedberg, *In the Shadow of the Garrison State: America's Anti-Statism and Its Cold War Grand Strategy* (Princeton: Princeton University Press, 2000). I use 'America' as a necessary form of shorthand, and am aware of the limitations accompanying the term.

[14] "Remarks by General Hoyt S. Vandenberg, Chief of Staff, U.S. Air Force, Before the Board of Directors of the Advertising Council," January 15, 1953, Box 91, Binder 2, Hoyt S. Vandenberg Papers, Library of Congress Manuscript Division, Washington, DC, p. 1. For more on the Ground Observer Corps, see Chapter Four.

Militarist forms of logic supported a pervasive condition that was not demobilization or mobilization, but an uncertain, prolonged search for an impossible national security. This was an intellectual project, since "the security imperative produces and is sustained by the strategies of knowledge which seek to explain it." Constructing contours, beginning with the safe centre of the nation-space, was also precarious. Recent work in international relations and critical geopolitics has convincingly demonstrated that the development of a state's internal identity, solidity, and geography are dependent upon and inseparable from the representation of dangerous others. As Edward Said wrote famously in *Orientalism*, it "is enough for 'us' to set up these boundaries in our own minds; 'they' become 'they' accordingly, and both their territory and their mentality are designated as different from 'ours'."[15] In considering the spaces that the American Cold War was built on, and challenging the resulting division and ordering of the world, not only are representations of 'other' spaces problematized, but the *position* of 'America' is also questioned as a site of power. Within the creation of national imaginaries we can uncover their performative basis *and* the geographies of this constitution.

The entities placed outside by the suitably named foreign policy, according to Stuart Hall, are, frustratingly, "always slipping back across the porous and invisible

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[15] James Der Derian, "The Value of Security: Hobbs, Marx, Nietzsche, and Baudrillard," in Campbell \ Dillon, eds., *The Political Subject of Violence*, pp. 94-113; the quote is from p. 103; Edward Said, *Orientalism* (New York: Vintage, 1979), p. 54; David Campbell, *Writing Security: United States Foreign Policy and the Politics of Identity*, Rev. Ed. (Minneapolis: University of Minnesota Press, 1998); Simon Dalby, *Creating the Second Cold War: The Discourse of Politics* (London: Pinter, 1990). For a useful summary of Campbell's book, see Steve Herbert, "Review Essay," *Political Geography* 15.6/7 (1996), pp. 641-645.

borders to disturb and subvert from the inside."[16] They are what Michel de Certeau called *tactics*. But while there is no escaping these enemies, since they refuse to disappear from an agonistic representational and territorial horizon, this dissertation attends to a second part of de Certeau's intriguing discussion. Although I will go on to use the term 'strategy' in its Cold War context, a broader definition that unequivocally *includes science* and other forms of politics is also exceedingly relevant:

> I call a *strategy* the calculation (or manipulation) of power relationships that becomes possible as soon as a subject with will and power (a business, an army, a city, a scientific institution) can be isolated. It postulates a *place* that can be delimited as its *own* and serve as the base from which relations with an *exteriority* composed of targets or threats.[17]

There are many Cold Wars, and my version wears its own partiality openly. A history of 'American' spaces is a history of 'American' ideas, and the following text draws substantially from archival and period sources at the confluence of geopolitics and science. Archives are contradictory, incomplete sites, where interpretations are forged and not given, that also require an outside to institute a form of discipline. In the case of the Cold War, security hurdles remain prominent; almost all of the material cited here is unclassified, or has been previously declassified. I have tried to read archival sources against the grain, to set them alongside other texts, and to embrace rather than bemoan contradictions and absences. In addition, certain individuals – although perhaps not always the expected ones – float through the chapters, but do so as vehicles for the

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[16] Stuart Hall, "When was 'the Post-Colonial'? Thinking at the Limit," in Iain Chambers and Linda Curti, eds., *The Postcolonial Question: Common Skies, Divided Horizons* (London: Routledge, 1996), 242-260; the quote is from pp. 252.

[17] Michel de Certeau, "'Making Do': Uses and Tactics," in his *The Practice of Everyday Life*, trans. Steven Randall (Berkeley: University of California Press, 1984), pp. 29-42; the quote is from pp. 35-36; Campbell, *Writing Security*, p. 214. De Certeau goes on to argue (p. 36) that each "'strategic' rationalization seeks first of all to distinguish its 'own' place, that is, the place of its own power and will, from an 'environment'," but the different use of 'environment' from mine is merely semantics. My reasons for the term's rescue will become apparent.

interweaving of argument, and not as icons for valorization. And yet, it cannot be avoided that this is a study of elites – and thus is tilted toward a cluster of dominant modes of knowing that are by no means homogenous, but, equally, are hardly diverse.

Although I attend, in places, to the various categories of identity coexisting alongside the performance of national geographies, one is admittedly more central: that of gender. In part this is due to my own choices and prejudices, but given the scope of this study, and the types of knowledge I attempt to situate, masculinity, specifically, is impossible to avoid. In her sketch of what a 'feminist geopolitics' might be, Jennifer Hyndman asserts that, among other pursuits, this approach should move across scales, challenging distinctions of disciplines and polities, and further destabilize the construction of security.[18] Among other consequences, Hyndman's appeal necessitates the use of interdisciplinary sources, and renders a strict account of Geography (capitalized) and geographers untenable.

Geography must be seen not as an exception but as part of a broader history whose outlines are less distinct: a history of geographic practice, or earth-writing. An account of militarism's geographies in Cold War America is thus also an alternative history of geographic thought. This is a lesson learned from the inventive work on Geography's imperial histories, scholarship that is just beginning to address the twentieth century.[19] The same temporal lack is true, intriguingly, of recent geographies of science, which have very little to say about the spaces of 'big science' or the military-industrial

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[18] Jennifer Hyndman, "Towards a Feminist Geopolitics," *The Canadian Geographer* 45.2 (2001), pp. 210-222; Steve Smith, "The Self-Images of a Discipline: A Genealogy of International Relations Theory," in Ken Booth and Steve Smith, eds., *International Relations Theory Today* (Cambridge: Polity Press, 1995), pp. 1-37.

[19] See, for example, Felix Driver, *Geography Militant: Cultures of Exploration and Empire* (Oxford UK and Malden MA: Blackwell, 2001).

complex, or their relation to the doctrines of geopolitics.[20] Perhaps these various chasms are part of what Neil Smith has called the "lost geography of the American Century," in reference to Henry Luce's well-known 1941 commentary first published in *Life* magazine. In Smith's impressive account, a "liberal victory *over* geography" is presumed by the principle of the American Century, and he sets out to challenge that supposition and the denials of imperial ambition that accompanied it.[21] His vehicle of choice is biography, and the subject is the eminently suitable Isaiah Bowman. Although I will return to Smith, and Bowman, my chosen sign-posts, as should already be clear, are quite different – not least because Bowman died in 1950, just when American militarism was beginning to seize, explore and define a set of strategic environments, beginning, and ending, with the globe itself.

Chapter One considers the tangled relationship and coalescence of geopolitics and science during the Second World War and early Cold War, documenting several strikingly similar facets of an emerging American globalism. This condition was not so much a rebuke to national isolationism, which was a mythic distraction, as it was a solidification of American military power and cultural confidence in a global arena. But both World War Two and the Cold War clearly demanded finer scales of spatial understanding. Chapter Two examines the world of regions, most commonly associated with the new field of area studies, which America confronted as it went to war in 1941. In both this and the next chapter, I argue that the history of Geography can be

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[20] See, for instance, David N. Livingstone, "The Spaces of Knowledge: Contributions Toward a Historical Geography of Science," *Environment and Planning D: Society and Space* 13 (1995), pp. 5-34; Livingstone, "Making Space for Science," *Erkunde* 54.4 (2000), pp. 285-296.

[21] Neil Smith, *American Empire: Roosevelt's Geographer and the Prelude to Globalization* (Berkeley: University of California Press), p. xviii; Henry R. Luce, "The American Century," *Life* (February 17, 1941), pp. 61-65.

productively set next to a much broader intellectual record of universal aspirations and regional necessity in social sciences such as anthropology, psychology and, of course, strategic studies. But Chapter Two is also a detailed examination of the military precepts driving the ambitious collection of a particularly geopolitical type of areal *intelligence*.

In Chapter Three, I pick up this thread and carry it into the early years of the Cold War, when area studies not only flowered but also shifted to focus on the regions that were coming to define a confrontation with international communism. Much of the history of area studies is commonly narrated using a small number of prominent publications, and I turn instead to archival sources to illustrate the complexity and pervasiveness of areal structures in the Cold War academy. A case can be made that under the sign of strategic intelligence area studies facilitated the precarious dance of positivism and practicality in the post-war social sciences.

Not surprisingly, many of the same tensions and presumptions of area studies were present in attempts to define a secure national space. Chapter Four combines and contrasts the laboratory studies of MIT and the RAND Corporation with the profoundly regional investigation of the North American Arctic in a geographical genealogy of Cold War continental defense. Once northern landscapes were enlisted in the form of radar lines and other scientific initiatives, and with the assistance of a largely acquiescent Canadian partner, a continental space could be conceived, and perhaps defended, in the manner of a cybernetic system. But should a response to attack fail, a final space would, it was widely believed, be specifically targeted: the generic site of the American city. In Chapter Five I argue that the portentous history of post-World War II urbanism requires attention to the anxieties exacerbated if not caused by the recitation of Cold War dangers,

including but not limited to the atomic bomb. In the novel interdisciplinary field of disaster scholarship, cities were turned into laboratories for the study of behavioral abnormality, precisely as they were being emptied and redesigned to account for other perceived forms of difference. Similarly, the reappearance of geopolitical tropes in urban spaces suggests that the Cold War cannot be easily divided into divergent foreign and domestic spheres.

Given Geography's imperial lineage, it is the turn to outer space after the Second World War that most convincingly challenges the impression of the period as suited to narrow accounts of disciplinary debates or hasty sketches justified by a perceived geographic sterility. Outer space was also the inheritor from the Arctic of the frontier designation reserved for those hostile realms that challenged the technological and psychological capabilities of an invasive 'man'. In a brief Conclusion, I argue that the diversity of speculation on extraterrestrial topics in advance of Sputnik and the American space program, including the intriguing 1956 film *Forbidden Planet*, confirms the frightening and fascinating abundance of militarism's geographies, particularly those of Cold War America.

Part One: Global Views

Chapter One – Between Geopolitics and Science

> Practical men hold global views, though they may not verbalize them, and in the light of their views they make important decisions. The whole direction of a nation's effort may be determined by the global thought filters of its leaders. A global view is more than just a filing system for information. Necessarily it becomes a system of evaluation. As such it may also be a system of distortion.
>
> - Stephen B. Jones [1]

Introduction

During the Second World War and the early Cold War, cultures of geopolitics and cultures of science merged in the United States to turn the globe into an object of militarism, an environment that was understood as a whole, as a space *for* American strategy. This space was what the modernization theorist Daniel Lerner called "a global arena of national action."[2] Global strategic views were distinct from, or rather a practical manifestation of, the much older tendency to see the world as a whole, and a step beyond the designation of 'every corner of the world' as potentially relevant to American security. While never entirely detached from locations or areas, the "closed space" of Cold War geopolitics was a more fully realized, systematic, and *technological* version of Halford Mackinder's turn-of-the-century discussions of social explosions reverberating "from the far side of the globe," and the global self-regulatory "closed circuit...complete and balanced in all its parts."[3]

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[1] Stephen B. Jones, "Views of the Political World," *The Geographical Review* 45.3 (1955), pp. 309-326. Jones was a Professor of Geography at Yale University. During World War II he worked for the Department of State on international boundary disputes; see his *Boundary-making: A Handbook for Statesmen, Treaty Editors, and Boundary Commissioners* (Washington: Division of International Law, Carnegie Endowment for International Peace, 1945).

[2] Daniel Lerner, "American Wehrpolitik and the Military Elite," *The New Leader* (April 26, 1954), pp. 21-22; the quote is from p. 21.

[3] Mackinder is quoted in Jonathan Haslam, *No Virtue Like Necessity: Realist Thought in International Relations Since Machiavelli* (New Haven: Yale University Press, 2002), p. 173; see also G. Kearns, "Closed Space and Political Practice: Frederick Jackson Turner and Halford Mackinder," *Environment and Planning D: Society and Space* 1 (1984), pp. 23-34; Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge: The MIT Press, 1996), p. 8.

This chapter brings together a diverse set of global views: those of popular cartographic reason, formal explications of international relations, scientific authority, and exhibitionary culture. Together, they articulated the mid-century path of 'geopolitics', which moved quite quickly, if not always convincingly, from the lurid scenarios of Second World War media into the accommodating doctrines of Cold War strategy. Unlike some scholars of geopolitics, I make few distinctions here between intellectuals, institutions, and ideology – or *formal*, *practical*, and *popular* geopolitics. In a study of interrelated Cold War environments, it makes little sense to conform to another set of imposed distinctions, particularly one that implies, at least, a hierarchy of importance. Joanne Sharp, for one, has argued that an "over-concentration on the understandings of elites" in critical geopolitics homogenizes the "sociology of knowledge production" and marginalizes popular geopolitical representations from the media and educational sources.[4] This absence is troubling precisely because popular geographies contain the potential to legitimate *or challenge* the hegemonic assumptions of a political elite. The result of integration is thus a messier, but ultimately more interesting, study, with a reduced emphasis on 'wise men' and hermetic theorizing.

The "influence of geography in determining the conduct of foreign policy" – as geopolitics was generally understood in the middle of the twentieth century – was a subject that concerned all manner of commentators and sources. Jonathan Haslam distinguishes between two divergent extensions of this core belief: a largely British stress

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[4] Joanne P. Sharp, "Publishing American Identity: Popular Geopolitics, Myth, and the *Reader's Digest*," *Political Geography* 12.6 (1993), 491-503; the quotes are from pp. 493; see also her *Condensing the Cold War: Reader's Digest and American Identity* (Minneapolis: University of Minnesota Press, 2000). The categories of geopolitics are discussed (for purposes of clarity only, it should be stressed) in Gearóid Ó Tuathail and Simon Dalby, "Introduction: Rethinking Critical Geopolitics: Towards a Critical Geopolitics," in Ó Tuathail and Dalby, eds., *Rethinking Geopolitics* (London: Routledge, 1998), pp. 1-15.

on the *conditioning* "constraints on the exercise of power dictated by the factor of space," and a largely middle-European understanding of "geography itself *determining* the nature of the state."[5] Although useful, this division presents two sides of the same coin. The "factor of space" in the first is no less deterministic than the organic logic of the second. But in the United States after the Second World War, the less controversial burdens of resources, technology and cultural obligation derived from the former were preferred, so much so that the term geopolitics was almost completely discarded and replaced by a more reasonable science, backed by the authority of an equally sanitized culture.

President Dwight D. Eisenhower summed up this shift in a 1954 speech: "The world, once divided by oceans and mountain ranges, is now split by hostile concepts of man's character and nature," two "world camps" lying "farther apart in motivation and conduct than the poles in space."[6] In this statement, the President not only articulated the binary divide of Cold War geopolitics, but also reaffirmed its *global* character by affirming the *worldly* nature and aspirations of each antagonist. My concern with just one 'camp' here does not entail a dismissal of the other. Eisenhower's imagery, I will argue, was not simply an instance of hyperbolic rhetoric deployed for effect, but a reflection of a much broader geographical condition which linked America to a global space and which held up the Soviet Union as an obstacle to a perfect match with that space. Eisenhower's words, moreover, indicate that Cold War geopolitics was perceptual, a trait that could not be erased by even the most hard-headed of strategists. And because the earth was divided by 'conduct', or behaviour, opponents were not easily

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[5] Haslam, *No Virtue Like Necessity*, p. 162, my emphasis.
[6] Quoted in Ellen Herman, *The Romance of American Psychology: Political Culture in the Age of Experts* (Berkeley: University of California Press, 1995), p. 135.

bounded in space. Their pervasive and ubiquitous presence (or potential) meant that the world became an object of surveillance and a scene of suspicion.

The antithetical character of Cold War rivalry voiced by Eisenhower, as part of a discourse of containment that acquired its own militarist global dimensions, was supplemented by an alternative, less conservative theme in American geopolitics: that of *integration*, a clever, 'positive' intermediary between isolationism and stark imperialism. Eisenhower's inaugural address, in 1953, for instance, had been rife with the rhetoric of international unity, shared faith, and "common dignity." These tropes provided a rationalization for certain forms of American foreign policy in the name of political self-determination and economic liberalization, and forced the concealment of other forms inside the covert methods of espionage. Partly as a result of the Cold War's ubiquity, the United States and the Soviet Union were both forced to attend to the continuing anti-colonial struggles in the various spaces collectively dubbed the Third World. This matters because, as Ann Douglas has reminded us, the Cold War has a world history that cannot be reduced to the metanarrative of bipolarity.[7]

[7] Ann Douglas, "Periodizing the American Century: Modernism, Postmodernism, and Postcolonialism in the Cold War Context," *Modernism/Modernity* 5.3 (1998), pp. 71-98; Leerom Medovoi, "Cold War American Culture as the Age of Three Worlds," *The Minnesota Review* 55-57 (2002), pp. 167-186; Christina Klein, "The Sentimental Culture of Global Integration," *The Minnesota Review* 55-57 (2002), pp. 153-165; the quote is from p. 153; see also her *Cold War Orientalism: Asia in the Middlebrow Imagination* (Berkeley: University of California Press, 2003). Just as certain facets of this strict dualism are beyond the scope of my discussion, so too are the copious contexts of decolonization and their links to new forms of neo-colonialism, such as the establishment of the pillars of the postwar financial order. The same is the case within the United States, where histories of the profound social changes that gathered steam in World War II and the 1950s have productively limited assertions of cultural conformity and consensus. My aim here, however, is to approach American cultures of Cold War geopolitics and science as both contradictory and complementary, able to promote various forms of universalism while shoring up the boundaries of a national space.

One New Globe

The July 1956 issue of *Scientific American* reported that the U.S. Army Map Service had just calculated the "longest line ever surveyed," stretching from Finland to the southern tip of Africa. The task was grounded in a long tradition of masculine adventure: south of Egypt the surveyors "were hindered by grass fires and aroused buffaloes." But such perils, together with the physical landscapes in which they took place, were ultimately erased from the record of scientific certainty as the "data" was "reduced to summary form with the aid of a large computer." This process of measurement and abstraction enabled the military cartographers to revise the estimated radius of the earth and to hold the space of the field and, by extension, the globe itself within the storage banks of a computer. Obtaining greater standardization and universality was also a matter of practical knowledge. Not only would maps become more accurate, but the new measurements would also be used to plot "the course of the earth satellites to be launched during the International Geophysical Year." Unmentioned were the more ominous military (rather than narrowly geophysical) applications of sharpened these coordinates for intelligence satellites and intercontinental ballistic missiles.[8]

The satellites mentioned by *Scientific American* were still the stuff of congruent science fiction scenarios and classified government reports in 1956, and when a space vehicle was launched over a year later, it was, alarmingly, not an American product. Yet

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[8] "It's a Smaller World," *Scientific American* 195.1 (July 1956), p. 50. This paragraph was influenced by Bruno Latour, "Circulating Reference: Sampling the Soil in the Amazon Forest," in his *Pandora's Hope: Essays on the Reality of Science Studies* (Cambridge: Harvard University Press, 1999), pp. 24-79. See also Donald MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* (Cambridge: The MIT Press, 1993); John Cloud, "Imagining the World in A Barrel: CORONA and the Clandestine

the exploits of the Map Service suggested that one did not have to leave the globe to grasp it as a whole; indeed, the radius of the world was calculated to be shorter than previously thought by some 128 meters. For many readers of the magazine, this claim was probably not surprising, since it was bolstered by far more pervasive – if somewhat vague – impression of time-space compression during the early Cold War. These impressions were just that; they aided in the production of a profoundly Eurocentric imaginative geography that, while it did not capture the process of uneven development, nonetheless helped to articulate a liberal discourse of geopolitical and geoeconomic globalization. In order to perceive a this 'shrinking world', the space of the globe had to be conceived as alterable – as a malleable abstraction – through what can only be called masculinist detachment.[9]

In the most literal cases – as in cartography – this detachment requires a representation of a "unitary, regular body of spherical form." The "Apollonian eye," as Denis Cosgrove calls it, has a long history, of course, but during the first decades of the twentieth century it came to be associated with the dual technologies of flight and aerial photography. But despite the democratization of "aerial vision," the resulting views were always "produced from *somewhere*." Such is the nature of perspective, but this is hardly an innocent affiliation. The history of appeals to global knowledge is overwhelmingly one of imperial hierarchy, not benign cosmopolitanism, as 'somewhere' has typically

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Convergence of the Earth Sciences," *Social Studies of Science* 31.2 (April 2001), pp. 231-251. For more on the International Geophysical Year, see the Conclusion.

[9] Gillian Rose, *Feminism and Geography: The Limits of Geographical Knowledge* (Cambridge: Polity, 1993); John Agnew and Stuart Corbridge, *Mastering Space: Hegemony, Territory and International Political Economy* (London: Routledge, 1995); David Harvey, *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change* (Cambridge MA and Oxford UK: Blackwell, 1990). One geographer who presciently recognized the unevenness of the "shrinking globe" was the Department of State's Samuel Boggs: see S. W. Boggs, "Mapping Some Effects of Science on Human Relations," *Scientific Monthly* 61.1 (1945), pp. 45-50.

assumed an unmarked aspect of authority and primacy. This is, in fact, the language of modern geopolitics, which, John Agnew argues, is contingent upon both a totalizing form of sight and a binary differentiation between known and unknown (or, for that matter, democratic and totalitarian) zones. These 'other' spaces are also signatures in time – they are 'backward' or 'advanced', 'modernizing' or 'developed' – that are made possible and legible because of the modern, privileged cast of the geopolitical worldview.[10]

It is well known that the geopolitical models of the early twentieth century fell into disfavour during and after the Second World War, when Germany's National Socialists subscribed to a particularly perverse from of reasoning rooted in the discourses and practices of territorial expansion and racial purity. But despite the taint of this *Geopolitik*, the dual characteristics of Agnew's modern geopolitics did not suffer for proponents during the early Cold War, on either side of the 'great power rivalry'. It seems that only the term geopolitics was marginalized, and similar forms of reasoning continued unabated. But there was one critical difference: whereas models built on the physical foundations of the earth characterized the pre-war period, during the Cold War this naturalistic emphasis gave way to a societal rhetoric of economics, politics and culture. In Agnew's formulation (along with Stuart Corbridge), 1945 marked the beginning of a new "geopolitical order" continuous with but distinct from those that

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[10] Denis Cosgrove, *Apollo's Eye: A Cartographic Genealogy of the Earth in the Western Imagination* (Baltimore: Johns Hopkins University Press, 2001), pp. ix, x; Derek Gregory, *Geographical Imaginations* (Cambridge MA and Oxford UK: Blackwell, 1994), p. 65, original emphasis; John Agnew, *Geopolitics: Revisioning World Politics* (London: Routledge, 1998), pp. 11-12. See also Cosgrove, "Contested Global Visions: *One-World, Whole-Earth*, and the Apollo Space Photographs," *Annals of the Association of American Geographers* 84.2 (1994), pp. 270-294.

preceded it.[11] While these periodizations have a formal utility, and while Agnew and Corbridge acknowledge the presence of earlier elements in their Cold War schema, they nonetheless remain tied to an imposed uniformity.

To the extent that representations of political space moved away from premises rooted in environmental conditions after the Second World War, this shift was made possible by a relatively novel technology and its strategic uses: air power. In the 1930s and 40s the 'view from above' was still very much linked to a specific archetype of the airman, an overwhelmingly masculine caricature (Amelia Earhart being the major exception). The airman's popular position was shifting from one of blissful freedom and adventure – a status that had partially obscured the minor, but spectacular, role of aerial combat in the First World War – to a moving point in the strategic coordinates of militarism. No longer always a dashing solo voyager, the airman became directly and fatally tied to the populations and structures that he might destroy, to the broader configurations of air forces and crews, and to a national cause rather than eccentric dreams.[12] But the same individual was also seen as a harbinger of liberal democracy, and in this respect his military roots were matched by the promise of commercial air transport. "We are turning more and more to the globe – and to maps which are projected in such a way that they show true *distances*," a 1943 cartography guide produced by one aviation corporation proclaimed. Distance, in the world of air power and atomic bombs, was not static, but rather a function of mobility, or *speed*, in the same

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[11] Agnew and Corbridge, *Mastering Space*; Chapter 3; Agnew, *Geopolitics*; see also Gearóid Ó Tuathail, "Postmodern Geopolitics? The Modern Geopolitical Imagination and Beyond," in Ó Tuathail and Dalby, eds., *Rethinking Geopolitics*, pp. 16-38.

[12] In addition to the First World War, air power was already being used in the 1920s for colonial purposes, and in this sense the heroic pilot was always a mythic construct, or at least always implicated in practices of violence.

sense that the telegraph transformed understandings of information in the nineteenth century. And by rising above the provincial, debased earth, the aviator might, as the humanist writer (and Librarian of Congress) Archibald MacLeish wrote in the 1944 collection *Compass of the World*, make the globe "truly round: a globe in practice, not in theory."[13]

MacLeish and his fellow *Compass* contributors were intent on setting out a "new vision" for the postwar world, and their approach was an idealistic dissent to the balance-of-power 'realism' that seemed to be creeping into the study of international relations and the public pronouncements of politicians. But *Compass of the World* was nonetheless premised on an American primacy. The book's tenets were visualized by the dramatic cartography of Richard Edes Harrison, a prolific contributor to periodicals such as *Fortune* and *Life*. His maps presented views from a fixed point beyond the earth rendered at unusual angles – a persuasive "illusion of depth and perspective," as one representative atlas put it – achieved by first photographing a large globe. The uncluttered appearance of these maps departed from familiar conventions so much that they were more akin to advertising than to anything previously classified as cartography, but they also turned viewers into pilots (Figure 1). More directly, Harrison's compositions were reprinted in military periodicals and used to train actual pilots, helping them to "visualize regions that had not been photographed from the air." This

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[13] *Maps...and How to Understand Them* (New York: Consolidated Vultee Aircraft Corporation, 1943), p. 10, original emphasis; Susan Schulten, *The Geographical Imagination in America, 1880-1950* (Chicago: The University of Chicago Press, 2001), p. 133; Alan K. Henrikson, "The Map as an 'Idea': The Role of Cartographic Imagery During the Second World War," *The American Cartographer* 2.1 (1975), pp. 19-53; Archibald MacLeish, "The Image of Victory," in Hans Weigert and Vilhjalmur Stefansson, eds., *Compass of the World, a Symposium on Political Geography* (New York: MacMillan, 1944), pp. 1-11; the quote is from p. 7; Cosgrove, *Apollo's Eye*, pp. 242-247. Cosgrove's discussion of *Compass of the World* is excellent, but his argument is limited by the minimal reference to other sources from the same period, no doubt a result of the tremendous historical scope of his own study.

trend anticipated a larger one: into the 1950s, maps in newspapers and magazines were resoundingly, overtly geopolitical, unafraid to demonstrate bias or the advantages of perspective.[14]

The spatial view offered in *Compass of the World* brought geopolitics together with science and culture to fashion a prospectus for the projection of American power over the horizons of the globe itself. The world, in other words, became a strategic environment, with America at its centre. The flexibility of this vision was such that it could be taken up in the cause of imperialism and militarism or, alternatively, under the banner of a humanistic internationalism based on integration and 'brotherhood'. As Susan Schulten notes, Harrison's maps could reinforce national boundaries, or they could reveal the falsity of these divisions.[15] But as World War turned into Cold War, the first of these options began to dominate the second, and lurked meaningfully in the background of debates over post-colonial equality and the frameworks of liberal capitalism. Even the most ambitious expressions of cosmopolitan identity were rarely severed from an American affiliation signaling dominance and responsibility.

In *The Geography of the Peace*, his short manifesto on the shape of the postwar spatial order, Yale's Nicholas Spykman argued that the "basis of world planning for peace must be world geography," but equally, the predicament of global war meant that

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[14] Hans Weigert and Vilhjalmur Stefansson, "Introduction," in Weigert and Stefansson, eds., *Compass of the World*, pp. ix-xvi; the quotes are from p. x; *A War Atlas for Americans* (New York: Simon and Schuster, 1944), n.p; Susan Schulten, "Richard Edes Harrison and the Challenge to American Cartography," *Imago Mundi* 50 (1998), pp. 174-188; the quote is from p. 185. Parts of this essay appear in her *The Geographical Imagination in America.*

[15] Schulten, "Richard Harrison," p. 187; Schulten, *The Geographical Imagination in America*, p. 145. The most famous statement of internationalism, of course, was Wendell L. Willkie, *One World* (New York: Simon and Schuster, 1943): "When I say that peace must be planned on a world basis, I mean quite literally that it must embrace the earth. Continents and oceans are plainly only parts of a whole, seen, as I have seen them, from the air" (p. 84). The map in the back of the book diagramming Willkie's journey was a Harrison-like view from above, centred on the North Atlantic.

military planning must also "consider the whole world as a unit and must think of all fronts in their relations with each other." For Spykman, those adept at the interpretation of maps could serve well under both conditions, and he postulated that the "entire earth's surface" should be the unit of study for these impassive strategists. But all global maps, he acknowledged, included biases, and users of cartographic representations should justify their particular choices. For his part, Spykman expressed affection for cylindrical adaptations of the "Miller projection," named after O. M. Miller of the American Geographical Society. These America-centric views portrayed the United States as *encircled* by other landmasses (Figure 2). While additional factors were required to justify this encirclement thesis, Spykman indicated that these would not be difficult to identify. But his citation of the Miller Projection suggested not only the dangers that motivated mid-century geopolitics, but also the vision of the globe itself as a battlefield. Once it was acknowledged that a perspective of encirclement could be produced from anywhere in the world, that "every point is surrounded by all other points," an approach to international relations perceiving ubiquitous threats to a national body was bound to follow.[16] Spykman was overwhelmingly concerned with the American version, since he believed awareness of encirclement had come only recently – and belatedly – to the United States.

Visions of a World at War

The war years were a prolific period for Richard Edes Harrison. His *Look at the World: The Fortune Atlas for World Strategy* was published in the same year (1944) as *Compass of the World*, and became not only a companion volume, but also a publishing

[16] Nicholas J. Spykman, *The Geography of the Peace* (New York: Harcourt, Brace and Co., 1944), pp. 18,

sensation. *Life* called Harrison's atlas a "geographical milestone...peculiarly appropriate to the present day."[17] The Second World War was not only a boon for Harrison, but for many American geographers. Clark University's Wallace Atwood noted in 1944 that interest "in a broad worldwide study of geography with a human point of view is sweeping over the country like a great tidal wave."[18] Provisioned cartographically by the National Geographic Society, President Franklin Roosevelt famously instructed Americans to acquire a map in advance of a February 1942 radio address on wartime strategy, when he suggested that listeners "take out and spread before you a map of the whole earth."[19] Geographical knowledge, at least that which could be derived or *discovered* from either a globe or one of the many war atlases sold to the public, became a valuable and much-discussed commodity, particularly in a society constantly brow-beaten by 'experts' for spatial illiteracy.

Harrison "was able to translate the conflict's new realities into graphic images for the public," shattering what he called the "static condition bordering on senility" that beset many professional geographers and cartographers. That war had generated tremendous interest in geography was not surprising. It was the unusual images the public was consuming, and the sources of these images, that were more significant and novel; older sources of representation, it seemed, could not accurately represent altered geographical 'realities'. But Harrison's visual sensibilities did not lead to a de-centring of America. Rather, his novel projections revealed that the "entire conflict pivots around

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[17] "Perspective Maps: Harrison Atlas Gives Fresh New Look to Old World," *Life* (February 28, 1944), pp. 56-60.

[18] Wallace W. Atwood, "Global or World Geography," *The Journal of Geography* 43.6 (1944), pp. 202-204; the quote is from p. 202.

[19] Schulten, *The Geographical Imagination in America*, p. 204. Schulten's important book is limited (perhaps necessarily) by a narrow definition of 'geography'.

the U.S.," and that the world was divided into two distinct camps: "those who are for us...and those who are against us." Among the maps that revealed the destiny and dangers facing the United States was one situated above the North Pole, which revealed the tight alignment of the Northern Hemisphere's continents, a relationship of proximity that became central to Cold War strategy (Figure 3). These and other perspectives shattered isolationist impulses and heightened domestic vulnerability by demonstrating the potential for siege from all directions, attacks that could extend deep into the American heartland. Equally, the cartographic output of the National Geographic Society had been recognized as "an important war weapon," according to Society President Gilbert Grosvenor.[20]

Not surprisingly, Harrison's approach led to criticism from the geographers and cartographers who he challenged. Predictably, some, such as the University of Chicago's Charles Colby, confronted him for failing to conform to standardized cartographic conventions, or for the sacrifice of mathematical precision. Harrison responded, appropriately, that all map-making was subjective. But in so doing, he was also implicitly acknowledging the veracity of another accusation: that his work was propagandistic. This charge carried with it a damning comparison with Nazi cartography, and implied an absolute distinction between objective, 'scientific' cartography and aberrant and abhorrent forms. By drawing the United States closer to enemy spaces and forces that were "converging" on the continent, Harrison's maps

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[20] Schulten, "Richard Edes Harrison," pp. 174-175, 177; Schulten, *The Geographical Imagination in America*, p. 205; Richard Edes Harrison, "Making Maps Tell the Truth," *Travel* 80.2 (1942), pp. 10-13, 30; Harrison, "The War of the Maps: A Famous Cartographer Surveys the Field," *The Saturday Review of Literature* 26.32 (August 7, 1943), pp. 24-27; the quote is from p. 24; Gilbert Grosvenor, "Maps for Victory: National Geographic Society's Charts Used in War on Land, Sea, and in the Air," *National Geographic* 81 (May 1942), pp. 667-690; the quote is from p. 667. Harrison was originally trained in architecture and interior design.

rendered America automatically global and internationalist, forced to contend with a new geography of war and aviation technology. He and others who were considering the spatiality of war were not afraid to acknowledge that the map was "a psychological weapon." Secure in the knowledge that cartographic representations entered actively into the fabrication of the world, these writers and artists chose what they believed to be the appropriate perspectives. Despite Harrison's admission of partiality, he believed his angles – the North Polar Azimuthal Equidistant Projection, for instance – to be closer to the *necessary truth* required for strategy.[21]

Novel forms of cartography were a response to what the New York Public Library cartographer Walter Ristow called "air age geography," a new form of spatial study that he compared to the unique, older variants of physical, economic, and political geography. For Ristow, this air age was a post-Pearl Harbor phenomenon, but it was also logically global: war and long-range aircraft had rendered "all regions intimately related." Hemispheric divisions, particularly that of east and west, were outdated, and he argued that geographers should "emphasize global problems" in teaching and research. Ristow's appeal was accompanied by a list of sources addressing these novel questions and relationships. But "global or world geography" was also a response to a peculiar set of spatial conditions, and it possessed distinct moral elements. Widening the horizons of mind and text would, Wallace Atwood proposed, "help prevent the recurrence of isolationism." This was a task that required allusions to both scientific universals and

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[21] Harrison, "Making Maps Tell the Truth," pp. 12-13; Richard Edes Harrison and Robert Strausz-Hupé, "Maps, Strategy, and World Politics," *The Infantry Journal* 51.5 (1942), pp. 38-43; Schulten, "Richard Edes Harrison," p. 185; John Pickles, "Texts, Hermeneutics and Propaganda Maps," in Trevor J. Barnes and James S. Duncan, *Writing Worlds: Discourse, Text and Metaphor in the Representation of Landscape* (London: Routledge, 1992), pp. 193-230; the quote is from p. 210; Walter W. Ristow, "Maps for Global War," *Library Journal* 68.8 (1943), pp. 324-325.

cultural difference. Just as air-age geography remapped the world from a new observation post, researchers began to look to the "geography of the air" as a space whose scientific dimensions had strategic implications.[22]

The literature on "air age geography" is overwhelmingly caught up in a deterministic switch from one based in environment (and race) to the empowering, and limiting, effects of technologies such as the airplane. In some ways, no doubt, this vertical movement was a minor one; humans were still dwelling and warring on the surface of the Earth. But these qualifications did not stop a litany of commentators, many writing for school-age audiences, from embracing a boundless "third dimension." This had significant ideological connotations for the enframing of geopolitics. Macmillan's Air-Age Education Series included some of the most inflated examples of this rhetoric. The Foreword to each book proclaimed that "wide seas, dangerous reefs, precipitous mountains, frozen wastes, and jungle depths, all barriers to earthbound generations, have become features of the landscape below the global sweep of the airplane travelers in the ocean of air." The guide for teachers applying this new "geocentric" curriculum listed national isolationism, ignorance, egocentricity, poor diplomacy, and lack of regional and urban planning as some of the effects of "our non-geographical thinking."[23]

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[22] Walter W. Ristow, "Air Age Geography: A Critical Appraisal and Bibliography," *The Journal of Geography* 43.9 (1944), pp. 331-343; the quotes are from pp. 333, 334; Atwood, "Global or World Geography," p. 202; Stefan T. Possony and Leslie Rosenzweig, "The Geography of the Air," *Annals of the American Academy of Political and Social Science* 299 (May 1955), pp. 1-11. Ristow moved to the Library of Congress after the Second World War.

[23] Ben D. Wood, "Foreword," in Hubert A. Bauer, *Globes, Maps, and Skyways* (A Text for High School Students) (New York: MacMillan, 1942), pp. v-vi; the quote is from p. v; George T. Renner, *Geographic Education for the Air Age* (A Guide for Teachers and Administrators) (New York: Macmillan, 1942), p. 1; see also James F. Chamberlain and Harold E. Stewart, *Air-Age Geography and Society* (Chicago: J. B. Lippincott, 1945); Grace C. Hankins, *Our Global World: A Brief Geography for the Air Age* (New York: Gregg, 1944); Chester H. Lawrence, ed., *New World Horizons: Geography for the Air Age* (New York:

While the outspoken Richard Edes Harrison was quick to denounce the excesses and betrayals of the "'Air Age' group" (in the process revealing his own penchant for methodological policing and promotion), many publishing houses ignored his caution, especially early in the Second World War when books, articles, and atlases on the subject flooded American stores. As Harrison noted, most of the best geographers could not contribute "to this output except in an advisory way, the reason of course being that this undermanned profession is busy fighting a war *with* maps and has little time for a war *about* them."[24]

Despite Harrison's reservations, geographical 'facts' could not be separated from geopolitical theories. The concept of an integrated, shrinking and traversable planet was, crucially, filtered through the conditions of War (and Cold War) – conflicts whose diverse dimensions meant that an atlas of strategy was not complete unless it was global, regardless of whether it was three-dimensional. These atlases, some indebted to Harrison's new methods, were, like his maps, still dependent on a naturalistic vision of geopolitics:

> The grand design of this war was largely a product of strategic geography. Strategic geography means, roughly, the influence of the earth's physical make-up on the

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Duell, Sloan and Pearce, 1942). For a brief discussion of the application of "world geography" literature in a particularly important educational context, see W. L. Baxter, "The Place and Problems of Geography Instruction at the Air Force Academy," *Journal of Geography* 59.9 (1960), pp. 411-415.

[24] Harrison, "The War of the Maps," p. 24; Harrison, "The Face of One World: Five Perspectives for an Understanding of the Air Age," *The Saturday Review of Literature* 27.27 (July 1, 1944), pp. 5-6; the quote is from p. 5. Harrison, it seemed, did have time for the latter, and he reserved a special vitriol for George Renner, a professor of Geography at Columbia's Teacher's College, whose cartographic knowledge, Harrison postulated, had a "quick-sand base." The geopolitical map use of "the Spykman school" also earned Harrison's disdain. Harrison's disagreement with Renner stemmed from the latter's assertion that a polar-centred projection was the best map for grasping Pacific strategy. Renner, an otherwise obscure teacher, gained infamy during the war with a June 1942 *Collier's* article that loftily redrew the world map along cultural and imperial lines. The reaction, from the columnist Walter Lippmann to leading geographers such as Isaiah Bowman, was intensely negative. See Karen DeBres, "George Renner and the Great Map Scandal of 1942," *Political Geography Quarterly* 5.4 (1986), pp. 385-394. For a later, and much more cautious, piece by Renner, see "What the War has Taught Us About Geography," *The Journal of Geography* 43 (December 1944), pp. 321-330.

> operations of war. The techniques of warfare had changed, but the scene of battle was still the earth itself.[25]

An equivalent statement was made by Nicholas Spykman just before the war:

> So we find that, although the entire policy of a state does not derive from its geography, it cannot escape that geography.... With these facts foreign policy must reckon. It can deal with them skillfully or ineptly; it can modify them; but it cannot ignore them. For geography does not argue. It simply is.[26]

Spykman's geography, a stage on which the drama of "security policy" is played out, was, like much scholarship of the pre-war period, a deterministic model that stressed environmental constraints. In this respect, the hindrances of space, and the power that accompanied the occupation of certain regions, could only be radically reduced by technologies such as the railway or the airplane. These distinct, human innovations *overcame* geography, but not completely: a political layer was reinscribed over the fixed tableau of physical structure. Similarly, the State Department's Samuel Boggs argued that while the distribution of natural resources was unchanging, science and technology (as human expressions) altered human relations over a spatial tableau. "It is as if the outlines of continents," he wrote in 1945, "were picture frames within which appeared ever-changing motion pictures, like montage effects in the cinema news reels." This was a technologized version of a comparable, if more ironically appropriate, comment he made in 1941: "It is as if a quiet game of croquet had been transformed into a stirring contest of polo, with its mounted players covering a greatly enlarged field at high speed, while the game was yet in progress." For Boggs, replacing reels and games with (global

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[25] *A War Atlas for Americans*, p. 1. This high-profile book was prepared with the assistance of the Office of War Information and the advice of Richard Edes Harrison; Harold Sprout, a political geographer I discuss below, wrote the text. The OWI was responsible for American propaganda. See also Edgar A. Mowrer and Marthe Rajchman, *Global War: An Atlas of World Strategy* (New York: William Morrow and Co., 1942), p. 6.

[26] Nicholas J. Spykman, "Geography and Foreign Policy, II," *The American Political Science Review* 32.2 (1938), pp. 213-236; the quote is from p. 236.

or national) maps, such as those representing changing energy consumption or transportation networks over time, could slow the display, but not the pace of an expanding West to an acceptably objective rate.[27] But what these *dynamic* visualizations revealed was the forward march of progress – if only in certain parts of the world – that simultaneously excused uneven development as an inevitable result of natural inequalities while limiting this nature to lists of resources.

Such impressions were not the marginal theories of cloistered intellectuals. Not only were writers such as Spykman and Boggs, albeit in quite different ways, proximate to those agencies charged with policy but their work was an outgrowth of the subject that, after 1899, was given the name 'geopolitics', as well as of most pre-war academic Geography in the United States, Britain, and Germany. Some of the practitioners of this Geography wove altered, national versions not only into the much-discussed Nazi doctrine of *Geopolitik*, but also into school textbooks and strategic primers distributed to American soldiers. In the latter case, a combination of self-evident elements accounted for the presence of great powers. As the Army Specialized Training Program's textbook *Geographical Foundations of National Power* (1944) explained, "the world that matters" included "the parts where the combination of rich natural resources and advanced industrial techniques has produced high standards of living and concentrations of political power." Measuring these elements over time revealed a state's relative "power potential." Power, then, still sprung from the earth, and even as geographers moved

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[27] Spykman, *The Geography of The Peace*, pp. 4-5; Boggs, "Mapping Some Effects of Human Relations," p. 45; S. Whittemore Boggs, "Mapping the Changing World: Suggested Developments in Maps," *Annals of the Association of American Geographers* 31.2 (1941), pp. 119-128; the quote is from p. 119; see also Gearóid Ó Tuathail, *Critical Geopolitics: The Politics of Writing Global Space* (Minneapolis: University of Minnesota Press, 1996), pp. 51-52. There are similarities here to Frederick Jackson Turner's 'frontier thesis'.

away from determinism toward a 'new' regional geography, elements of the older tradition still lingered.[28]

Notwithstanding an environmental dependency, the geopolitics of the early twentieth century was equally premised on a world of states and empires, a condition that did not significantly lessen during the early Cold War as empires modulated into neo-colonial zones of influence. Spykman's spatial determinants included Syria and Iraq's perennial "crossroads" status, the vulnerability of Belgium to enemy planes, and the climatic limitations of Russia's arctic ports.[29] Even the organizations that emerged to manage an international 'peace' were formed from groups of states, and the blocs of the Cold War were perceived similarly. During the Second World War, as hope for international cooperation faltered, the assertion of realist international relations added to the pervasiveness of this *territorial trap* by conceiving the unitary, timeless state as the basis of an international system, and by perpetuating the equivalence of sovereignty, security, and state boundaries. The state, moreover, became the "container of society" and, as a result, was lent the characteristics of a human individual.[30] During World War II, in particular, this geopolitical position merged with similarly simple theories of national character, which were flexible enough that they could be expanded from the state to encapsulate a region.

The struggle to shake off determinist shackles led to the definition of a more 'scientific', regionally-based political geography, set against not only the horrific

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[28] Army Service Forces Manual M103-1, *Geographical Foundations of National Power, Section One* (Washington: United States Government Printing Office, 1944), pp. 1, 4; Agnew and Corbridge, *Mastering Space*, pp. 63-64; DeBres, "George Renner." Similar principles are evident in a much later text designed for midshipmen at the U.S. Naval Academy: see William W. Jeffries, ed., *Geography and National Power*, Revised and Updated Ed. (Annapolis: United States Naval Institute, 1959).
[29] Spykman, "Geography and Foreign Policy, II," p. 236.
[30] Agnew and Corbridge, *Mastering Space*, p. 95.

excesses of German *Geopolitik* but also the crude theories of George Renner and others who seemed to win favour with popular periodicals. This was a battle for reputation since the two sides of the subject were frequently conflated – a mistake that must have been "particularly galling" for distinguished "leaders of geography" such as Isaiah Bowman and Richard Hartshorne, both heavily involved in the American war effort. Bowman's determination to distinguish (political) Geography from geopolitics, and himself from geopolitical thinkers of any stripe, led him to prepare an article for *The Geographical Review* in 1942, in which he identified geopolitics with a distorted, particularistic view of space devoted only to German aggression. Tracing Nazi policy to German politics and philosophy of the past two hundred years, Bowman was in effect departing very minimally from the timeless essences of *Geopolitik* by only demonstrating their opposition to democratic principles that were, notably, vested in the American Constitution. This was an opinion shared by his fellow geographer Derwent Whittlesey, whose *German Strategy of World Conquest* (1942) outlined a plan for expansion and, ultimately, global domination that was innate to a German "habit of mind." "Scientific geography," in Bowman's opinion, had been appropriated and applied improperly by German strategists, who had conveniently ignored the moral foundations that allowed, and required, 'science' to be distinct from political process. Bowman spent little time delineating the principles of this science, perhaps because his argument was a tenuous one, whose strengths lay far more in the vague invocation of international cooperation and democracy, where he believed scientific inquiry belonged. But like Whittlesey, Bowman was effectively using "a mix of positivism and ideology against positivism and ideology."[31]

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[31] DeBres, "George Renner," p. 392; Isaiah Bowman, "Geography vs. Geopolitics," *The Geographical*

Geopolitik became, for much of the popular media in the United States, a "hidden logic" used to explain principles of Nazi war planning. Part of widespread "fear and fantasies about Nazi Germany," the preoccupation with *Geopolitik* was also a serious one, as Americans were instructed to take this "new form of global thinking" seriously, to educate themselves and weigh similarly global responses. The ideas and maps of Halford Mackinder made a "remarkable resurgence," and just before his death in 1943 a final re-affirmation of his heartland thesis was published in *Foreign Affairs*, the journal of the influential Council on Foreign Relations. In the United States, domestic experts, many of them émigrés from Central Europe, became frequent commentators on geopolitical thought and practice. In the media, their expertise was opposed to the German strategist Karl Haushofer. in periodicals such as *Life* and *Reader's Digest*, and even in short Hollywood propaganda films, Haushofer frequently, and incorrectly, appeared as a "superbrain or scientist" at the head of a (mythical) seat of power, a Munich Geopolitical Institute. Interestingly, one magazine piece described Haushofer's compilation of a monumental "Strategic Index" tabulating "every phase of every nation's life." Gearóid Ó Tuathail notes that while such a project never existed, its creation alone is indicative of the American fascination with the "nightmarish modernity" of Nazism, a conspiratorial and paranoid vision of omnipotent military intelligence and unmatched social scientific knowledge.[32]

Review 32 (1942), pp. 646-658; Derwent Whittlesey, *German Strategy of World Conquest* (New York: Farrar and Rinehart, 1942); Ó Tuathail, *Critical Geopolitics*, pp. 128-129; Neil Smith, "Isaiah Bowman: Political Geography and Geopolitics," *Political Geography Quarterly* 3.1 (1984), pp. 69-76; see also his *American Empire: Roosevelt's Geographer and the Prelude to Globalization* (Berkeley: University of California Press, 2003).

[32] Halford Mackinder, "The Round World and the Winning of the Peace," *Foreign Affairs* 21.4 (1943), pp. 595-605; Ó Tuathail, *Critical Geopolitics,* pp. 111-112, 117, 131-132; Schulten, *The Geographical Imagination in America*, p. 136. As I explain in the next two chapters, dreams of similar archives were pervasive in Cold War America as well.

In the work of the more considered, "middle-brow" wartime commentators, some of the lurid exaggerations listed above were dismissed, but geopolitics remained an important practice not only for Nazi policy planners but also, once purged of certain qualities, for Allied strategists as well. For prominent authorities such as the Austrian migrant Robert Strausz-Hupé, the belief that "space is power and that international politics is a struggle between different states for space" remained a timeless truth, and was only rendered "degenerate" by the invasion of ideology. The United States, in various treatments of German geopolitics, was *lacking* this type of analytical potency, a mathematical and technical form of "instrumental reasoning." Such demands led to calls for the formation of an American Institute of Geopolitics, and although the most dramatic schemes fell through, the War Department did set up a Geopolitical section within its Military Intelligence Service in June 1942. Leading geopolitical thinkers, from Whittlesey and Spykman to Edward Mead Earle and Harold Sprout, served as consultants. At Georgetown, Edmund Walsh, the Jesuit founder of the University's School of Foreign Service, set out to turn his program into a similar Institute. Walsh, who had interrogated Haushofer after the war, believed that *Geopolitik* had significant "scientific merit."[33]

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[33] Ó Tuathail, *Critical Geopolitics*, pp. 49, 126-127, 133, 283 n.48; on Strausz-Hupé, see Andrew Crampton and Gearóid Ó Tuathail, "Intellectuals, Institutions and Ideology: The Case of Robert Strausz-Hupé and 'American Geopolitics'," *Political Geography* 15.6/7 (1996), pp. 533-555; on Walsh, see Gearóid Ó Tuathail, "Spiritual Geopolitics: Father Edmund Walsh and Jesuit Anticommunism," in Klaus Dodds and David Atkinson, eds., *Geopolitical Traditions: A Century of Geopolitical Thought* (London: Routledge, 2000), pp. 187-210. Similar proposals, updated with additional scientific terminology, were floated after the Soviet Union launched Sputnik. As one proposal put it, because the "information system itself has become a 'weapon system'," an urgent need existed for "an American center where the knowledge of the world can be marshaled and made available to American scientists and engineers, managers, and planners." See "A National Technical Information Center," MC 420 (Jerome Wiesner Papers), Box 4, Folder 124, Institute Archives, Massachusetts Institute of Technology, Cambridge, MA (hereafter MIT).

To these and other intellectuals, the appeal of German *Geopolitik* was its role as a predictive, synoptic, and global 'science', fatally fascinating because of its potential for disaster if thrust into the wrong hands. In this vein, geopolitics, writes Ó Tuathail, "is *insight*, the figure of the geopolitician a seer...a scientist yet also a prophet, a positivist yet also a creative, envisioning artist." The spatial detail and coverage supposedly acquired by the fictional Munich Institute and its Strategic Index project were essential to the postwar world, so long as they remained leashed by a progressive positivism. Similar, seemingly contradictory attributes also characterized post-war American strategic thought, which "promised the disenchantment of the surface of international affairs by reenchanting that very surface with tales of undisclosed strategic space and magical formulas that compelled the earth to reveal its secret strategic pathways and faultlines." As another excuse for a globalist outlook, the slippery signifier 'geopolitics' was melded, somewhat awkwardly, onto a larger body of foreign-policy discourse, where it seemed to fit comfortably and anonymously with a state-based political realism.[34]

Global Mission: The Technological Horizons of Air Power

> Air power was attractive for a number of reasons. It was capital rather than labor intensive, and thus provided a practical alternative to what was always unpopular – a large standing army. The approach suited America' geographic position in two ways: it made up for the obstacles in getting an army to Europe quickly, while the United States' own real vulnerability – if it had any at all – was almost exclusively along its "air frontier".... A new and important industrial sector lobbied for it. Finally, air power – whether Navy or Air Force – had deep-rooted popular support.
>
> - Daniel Yergin [35]

Early in September 1944, Commanding General of the Army Air Forces Henry H. ('Hap') Arnold met with the aeronautical scientist Theodore von Karman at La Guardia

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[34] Ó Tuathail, *Critical Geopolitics*, p. 134, my emphasis; see also pp. 135-140.
[35] Daniel Yergin, *Shattered Peace: The Origins of the Cold War and the National Security State* (Boston: Houghton Mifflin, 1977), p. 339.

Field in New York to discuss the formation of a long-range science committee for the Air Force. Urging the Hungarian émigré to look beyond the ongoing conflict and forecast the shape of post-war air power, Arnold gave von Karman free rein to assemble a team of scientists, study the latest in military and civilian research trends, travel abroad to interview colleagues and captured enemy researchers and, ultimately, prepare a summary report. The result was *Toward New Horizons* (1945), a multi-volume study produced by the Scientific Advisory Group of the Air Force that fed directly into Cold War programs for air defence. In the report's key summary volume, von Karman argued that strategy for increasingly *technological* war (which the Second World War was, and future conflicts surely would be) must "refer to the three dimensional space surrounding the globe." Resigning the geopolitics of land and sea to an archaic, secondary status, Von Karman set out the central philosophy behind scientific air power: a formidable air force must be able to secure "superiority over any region of the globe."[36]

While aviation, for Von Karman, was a heroically human effort to escape the limitations of nature, he also envisioned a future "war machine in the proper sense of the word," ignorant of weather or darkness, that would consist of "technical devices only," with a "master strategist" directing from a distance. *Toward New Horizons* went on to discuss in some detail speculative or nascent innovations such as supersonic flight, pilot-less aircraft, propulsion, and radar. Von Karman's discussion of machinic vision no doubt upset many traditionalists, and was almost *chronopolitical* in its language of pure,

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[36] *Toward New Horizons: A Report to General of the Army H. H. Arnold Submitted on Behalf of the A. A. F. Scientific Advisory Group by Th. Von Karman – Volume 1: Science, the Key to Air Supremacy*, submitted 15 December 1945, Box 58, Carl A. Spaatz Papers, Library of Congress Manuscript Division, Washington, D.C. (hereafter LOC), pp. 1, 5, 7. See also Michael H. Gorn, *Harnessing the Genie: Science and Technology Forecasting for the Air Force, 1944-1986* (Washington: Office of Air Force History, 1988). Arnold was also devoting time and money toward a Douglas Aircraft Corporation study of future war called Project Rand – discussed in Chapter Four.

ubiquitous war untouched by geography. However, his speculations were translated and transformed into much more familiar language by Arnold and his colleagues. In a 1946 *Air Affairs* paper, published just as he was retiring, Arnold noted simply that science and technology had "negated the concept of isolationism." The lessons of bombing campaigns over Germany and Japan, at least for Air Force officials, were clear: air power, in Arnold's opinion, had been "decisive," and would be integral to national security and military success in the future.[37]

Arnold's *Air Affairs* article paled in comparison to his concurrent piece in *National Geographic*, titled "Air Power for Peace," which ran to fifty-seven pages. "With present equipment," Arnold warned, "an enemy air power can, without warning, pass over all *formerly visualized barriers*." Not only was this a call for novel forms of defence, but Arnold also believed a powerful air force would serve as an important deterrent to surprise attack. Whether planning for offence or defence, scientific superiority was essential to national security, and thus to 'peace'. Arnold's advertisement for American air power was also a case for the continuation of military might into the uncertain postwar period, when unceasing "patrol of the entire world" would be required to maintain the American atomic monopoly. His autobiography was, after all, titled *Global Mission* (1949). While Arnold suggested this vigilance might be organized by the United Nations, he remained skeptical. Regardless, enforcement would

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[37] *Toward New Horizons v. 1*, p. 12; H. H. Arnold, "Science and Air Power," *Air Affairs* 1.2 (1946), 184-195; the quote is from pp. 184. See also John Johnston, "Machinic Vision," *Critical Inquiry* 26 (Autumn 1999), pp. 27-48; James Der Derian, "The (S)pace of International Relations: Simulation, Surveillance, and Speed," *International Studies Quarterly* 34.3 (1990), pp. 295-310. For a decidedly more unstructured (or post-structured) version of the "war machine," see Gilles Deleuze and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987).

have to be supplemented by a strengthened national intelligence agency.[38] From within the military, Arnold was speaking the language of many civilian strategists: the atomic bomb, and its means of 'delivery', had profoundly altered the construction and viability of security, and thus the theorization of geopolitical space. But the 'absolute weapon' had also altered conventional understandings of war and its geographies.

Air power's destructive potential had been understood long before World War Two. But once saddled with an atomic bomb, a long-range plane, whether American or Soviet, became much more than part of a war plan. To strategists, it was symbolic of eroding distinctions between geopolitical heartlands and peripheries, whether on a national or international scale. These differences were irrelevant so long as forces were maintained in the vital, interstitial 'rimland' zones, where power zones were "penetrable." The U. S. Air Force defined "heartland actions" as "attacks against the vital elements of a nation's war sustaining resources," which specified no 'interior' location for those elements. Air power combined with the atomic bomb signaled a concentration of the *time* of violence (and the time needed to mobilize), but an expansion of the reach and scale of destruction. In these and other respects war, it seemed, became more inhuman, not only in its scale but in terms of conduct. The unparalleled "technological fanaticism" of the American military, particularly during the Second World War, allowed for "physical and psychic distance" from opponents.[39]

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[38] H. H. Arnold, "Air Power for Peace," *National Geographic* 89.2 (February 1946), pp. 137-194; the quotes are from pp. 137, 144, my emphasis; Arnold, *Global Mission* (New York: Harper, 1949). See also Dik A. Daso, *Hap Arnold and the Evolution of American Airpower* (Washington: Smithsonian Institution Press, 2000).

[39] Arnold, "Air Power for Peace," p. 160; Bernard Brodie, "Implications for Military Policy," in Brodie, ed., *The Absolute Weapon: Atomic Power and World Order* (New York: Harcourt, Brace and Co., 1946), pp. 70-107; Stephen B. Jones, "Global Strategic Views," *The Geographical Review* 45.4 (1955), pp. 492-508; the quote is from p. 498; Sir John C. Slessor, *Strategy for the West* (London: Cassell, 1954), p. 35; William L. Borden, *There Will Be No Time: The Revolution in Strategy* (New York: MacMillan, 1946), pp.

The Transformation of Geopolitics

As the risks of technology came home to roost, American commentators were prompted to invoke the rhetoric of a new world rendered more insecure by science. In his 1947 treatise *The Price of Power*, *New York Times* military correspondent Hanson Baldwin noted that the shrinkage of the earth and the developing condition of "bi-polarity" meant that "choosing sides" had been hastened by the disappearance of neutral, middle ground. The United States was, Baldwin went on to argue, now at the centre of a "security zone" that spread concentrically outward over the new maps of the air age – maps that had discarded the Mercator projection for the accuracy of a north-polar orientation. Unlike more conservative commentators, Baldwin did not quite embrace the apocalyptic imagery of a necessary struggle for world domination. But he did admit that America's "*absolute* strength" was unprecedented in world history, and that the trend of imperial decline meant that this status would probably not last. The "only way" to proceed, then, was to combine an internationalist, *decompartmentalized* foreign policy with "security measures" at home – to maintain national power as a source of "international rehabilitation and world stability."[40]

Baldwin's book and its diction were cruder versions of the debates and discourses in international relations and strategic studies that captivated American intellectuals after the Second World War. His grudging and generalized policy recommendations also indicated the stark division between international and national spaces, as well as the

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161-162; Michael S. Sherry, *In the Shadow of War: The United States Since the 1930s* (New Haven: Yale University Press, 1995), p. 81; see also his magisterial *The Rise of American Air Power: The Creation of Armageddon* (New Haven: Yale University Press, 1987).

[40] Hanson W. Baldwin, *The Price of Power* (New York: Harper and Brothers, 1947), pp. 24-25, 32, 143-144, 302-303; original emphasis; James Burnham, *The Struggle for the World* (New York: J. Day, 1947).

impossibility of distinguishing these in any realm except the terminological. The "liberal moment" was also, paradoxically, the period when the question of security "became especially acute."[41] This contradiction was especially sharp in the scholarly terrain that incorporated international relations, strategic studies, and, much more modestly, a revised and secondary political geography.

As I have noted, the term 'geopolitics' was negatively associated with a Nazi pseudoscience during the early Cold War, and that relationship still figures prominently in more recent discussions of the decline of geopolitics – and spatial theory generally – in post-war America.[42] But while correct in the sense of historical usage, arguments like these risk internalizing the very logic that they intend to critique, by licensing a resignation of the Cold War to a realist past without articulating the *work* that was required to mould a hegemonic realism. Like much of human geography during the same period, post-war geopolitics was reinvented as a science – in this case a *science of strategy* – that derived much of its force from technological rather than environmental determinism. In addition, an "earlier emphasis on the ontological primacy of the natural world was replaced by the epistemological primacy of the natural sciences."[43] Geopolitical factors such as boundaries and populations were yielding to science and its artifacts. But science, in this case, was a loose term.

See also Gearóid Ó Tuathail, "Deterritorialized Threats and Global Dangers: Geopolitics, Risk Society, and Reflexive Modernization," *Geopolitics* 3.1 (1998), pp. 17-31.

[41] Robert Latham, *The Liberal Moment: Modernity, Security, and the Making of Postwar International Order* (New York: Columbia University Press, 1997), p. 3.

[42] See Leslie W. Hepple, "The Revival of Geopolitics," *Political Geography Quarterly* 5.4 (Supplement) (1986), S21-S36.

[43] Derek Gregory, *Ideology, Science and Human Geography* (London: Hutchinson and Co., 1978), p. 19. 'Physical' sciences may be a better term, in the sense that biological models were giving way to the technocratic and mathematical outlooks of physics and engineering.

International relations, strategic studies, and political geography were linked by a Cold War sensibility that took America as the centre of a *hostile* world. The second half of this assertion is as important as the first: America was indubitably positioned centrally, but it was also surrounded by antagonists, dangers and threats. For the Yale geographer Stephen Jones, by 1955 it was "safe to say that the man of affairs in any civilized land has a world-wide outlook, and, increasingly, so does the man in the street." But some twelve years earlier, before the official commencement of the Cold War, Isaiah Bowman had clarified geopolitical threats that accompanied American responsibility in a general, predictive tone. In his 1943 presidential report to Johns Hopkins University, he wrote that "we can not safely limit our future responsibilities to narrow zones of power. No line can be established anywhere in the world that confines the interest of the United States because no line can prevent the remote from becoming the near danger."[44] Assuming this was the case, Jones, Bowman, and their American counterparts were concerned with two questions: how could the dynamics of this strategic world be accurately represented, and how was security achieved, nationally *and* globally?

Jones was less concerned with the practical limitations of maps and globes than with "the plethora of data about the world." This problem was not limited to the scale of the globe, but it was taken for granted that the greatest perplexity accompanied an earth-sized data set. Given this predicament, the correct choice of "global systems" was crucial. In his Office of Naval Research-funded survey of these 'views', Jones moved quickly through a 'physical' grouping of latitudinal zones and climatic regions, hemispheres, and panregions, and a 'human' category including population, race, culture,

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[44] Jones, "Views of the Political World," p. 309; Isaiah Bowman, "A Department of Geography," *Science* 98.2556 (December 24, 1943), pp. 564-566; the quote is from p. 564.

economic resources, political boundaries, state behaviour, and circulation patterns. These, Jones summarized, were all combinative – ways of organizing the world that could be layered together easily. In a second paper, Jones addressed "systems that are more nearly complete in themselves," those of "global strategies," the geopolitical theories of Mahan, Mackinder, and Spykman, which, Jones noted, all shared much with George Kennan's containment policy: essentially "preventing Soviet extensions of Soviet control in the Rimland."[45]

When compelled to choose, Jones built an "eclectic global view," but one that was nonetheless "based on the concept of national power," or the "inventory" of a state, and what the state does with its inventory. The former included variables of population, culture, and resources, while the latter, strategic component incorporated the spaces in which power – derived from these variables – is projected outward across the globe. Jones, in other words, reaffirmed the classic distinction between domestic and foreign. What lies inside national boundaries is fixed, or settled, and what exists outside is an anarchic space of mobility. It was thus natural to maintain a (traveling) military presence in this foreign world. This structure of the global view is, because of the complexity of information involved, more important than the space itself. Once the structure was set in place, additional data could be filtered through, or policy enacted. Moreover, scholarly inquiry and geopolitical practice were, for Jones, equivalent: "the path of our safari is beset by pitfalls.... But hazards and discomforts are inevitable accompaniments of

[45] Jones, "Views of the Political World," p. 311, 326; Jones, "Global Strategic Views." Interestingly, these two papers were combined, with very few alterations, into "Global Strategic Views," in Air Force Reserve Officer Training Corps, *Military Aspects of World Political Geography* (Maxwell Air Force Base, AL: Air University, 1959), pp. 38-67.

adventure." Jones's concurrent work on "field theory"[46] was similarly all-encompassing – a bundle of ill-fitting principles behind a mask of scientific veracity and practical utility, and an attempt to supplement political realism with the additional *detail* of geography.

Jones was not the only geographer seeking to rehabilitate the political side of the discipline. In his 1950 presidential address to the Association of American Geographers, Richard Hartshorne set out a "Functional Approach in Political Geography," a meandering speech that attempted to move the "wayward child of the geographic family" toward "established methods of scientific analysis." The result was a remarkably *depoliticized* article, at least overtly. In a cryptic reference to the rising tide of McCarthyist anti-communism, Hartshorne described "political demagogues who find in any divergence of opinion from their own a sign of disloyalty," and added a footnote suggesting that readers "may find the pertinent connection by looking to the front pages of almost any American newspaper for any day during the month of March, 1950."[47] Yet his denunciation was also an appeal to intellectual authority, an attempt to detach scientific, geographic inquiry from the messy terrain of politics.

According to historians of international relations, policy-relevant realism received its great boost during the Second World War, when grand strategy, influenced heavily by concurrent debates over geopolitics, emerged out of the shadows of collective security.

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[46] Jones, "Global Strategic Views," pp. 505, 506, 508; see also Stephen B. Jones, "The Power Inventory and National Strategy," *World Politics* 6.4 (1954), pp. 421-452; and "A Unified Field Theory of Political Geography," *Annals of the Association of American Geographers* 44.2 (1954), pp. 111-123. *World Politics*, established at Yale's IIS in 1948, was a methodology- and model-oriented counterpoint to the Council on Foreign Relations' respected *Foreign Affairs*. See William C. Olson and A. J. R. Groom, *International Relations Then and Now: Ongoing Trends in Interpretation* (London: HarperCollins, 1991), p. 108.

[47] Richard Hartshorne, "The Functional Approach in Political Geography," *Annals of the Association of American Geographers* 40.2 (1950), pp. 95-130; the quotes are from pp. 95, 96, 103.

The nearly complete drift of professional geographers away from political scholarship after the disastrous suggestion of associations with *Geopolitik* left international relations with a minimal spatial sensibility. Instead, it retained an older, state-centric preoccupation while stressing increased rigor, utility, and abstract conceptions of power. As expressed in the power-based writings of scholars like Hans Morgenthau of the University of Chicago, post-war realism was not yet driven purely by scientific justification, but it was certainly not opposed to a search for empirical regularities.[48]

Influential wartime books such as Nicholas Spykman's *America's Strategy in World Politics* (1942) had advanced the understanding that global politics was a struggle for power. Realists such as Morgenthau borrowed the explicit normative, 'national interest' emphasis of Spykman's title while attempting to root the dilemmas of post-war foreign policy in the "laws, or regularities, of state behaviour." The embrace of a 'scientific method' in the American social sciences encouraged Morgenthau's sweeping analyses during and after the Second World War. This acceptance went "beyond the concern for problem-solving" to become an "operational paradigm." Stanley Hoffman is correct to note the role of émigré scholars, such as the German-born Morgenthau, in advancing these changes. Their philosophical training, historical sensibilities (including a sharp awareness for the catastrophes of the Second World War), and cosmopolitanism "moved them to ask far bigger questions...about social wholes, not just about small towns or units of government." This multiple worldliness was, in turn, precisely attuned to the practice of politics. Fascination with power matched America's novel status as an

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[48] Olson and Groom, *International Relations Then and Now*, pp. 98-100, 104; Harald Kleinschmidt, "Realism," in his *The Nemesis of Power: A History of International Relations Theories* (London: Reaktion, 2000), pp. 195-216. Morgenthau, it should be noted, was also prominently opposed to the Vietnam War.

imperial colossus. The Soviet-American confrontation was unprecedented, and of immense significance. To study the international 'system' from within America was to consider America's strategy. And this was not a comfortable task, given the perils that beset the nation.[49]

Spykman, a Dutch immigrant, was a prominent figure at Yale's Institute of International Studies (IIS), the most prestigious centre of its kind in the United States during the 1940s. Converted by his friend Arnold Wolfers, a Swiss-born student of realpolitik, from an idealist into an advocate of force and power, Spykman led the Institute during its formative years, until his death in 1943. He is best known for a revamped version of Mackinder's heartland thesis stressing the strategic importance of 'rimland' regions surrounding the Eurasian 'world-island', and the need for an interventionist American stance in these regions and elsewhere – a worldview, in short, perfectly suited to the American Cold War.

At Yale, a practical approach to the present condition of American foreign policy held sway. Spykman and Wolfers were joined by Frederick Dunn (a frequent visitor to the State Department) and later by a group of younger, talented scholars including William T. R. Fox, Bernard Brodie, Gabriel Almond, and Klaus Knorr. Yale seminars drew in others with similar interests, from Hanson Baldwin to the sociologist Harold Lasswell. Contributing to policy by the end of the Second World War, and sending large numbers of students into the Foreign Service, the IIS became a model for the schools of

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See Ido Oren, *Our Enemies and US: America's Rivalries and the Making of Political Science* (Ithaca: Cornell University Press, 2003), pp. 152-153.

[49] Stanley Hoffmann, "An American Social Science: International Relations," *Daedalus* 106.3 (1977), pp. 41-60; the quotes are from pp. 44, 45, 46-47; Hans J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace* (New York: A. A. Knopf, 1948); Nicholas J. Spykman, *America's Strategy in World Politics: The United States and the Balance of Power* (New York: Harcourt, Brace and Co., 1942); Isaiah Bowman, "Political Geography of Power," *Geographical Review* 32.2 (1942), pp. 349-352.

strategy that proliferated in the early years of the Cold War, and many of its members went on to distinguished careers with close ties to military agencies. Intimate links were also established between theorists concerned with American foreign policy and students of the regions to which that policy was directed. Indeed, the main financiers of early Cold War 'area studies' – the Rockefeller Foundation and Carnegie Corporation – gave generously to the IIS and related centres as well, often from within the same funding stream. Globalism, after all, was a philosophy of many components.[50]

If there is one conclusion that can be drawn from the vast literature on realism, it is that the term is too frequently used as a single stand-in for a much more heterogeneous intellectual constellation – often by realists themselves, who place it at the centre of international relations theory. The disciplinary debates and policing within international relations share familiar characteristics with those in other fields, including Geography. It does not help that the 1940s and 1950s, in the conventional terminology of paradigms, included two 'great debates' in international relations, between idealism and realism and between realism and behaviouralism. But as in Geography, harsh distinctions are also misleading. It makes little sense to divide Cold War realists into two distinct groups, one motivated by the classical realism of power politics and human nature and the other by a neo-realism of behaviour, anarchy, and hypothesis-testing. In both camps, a shared faith in the power of timeless laws (historical or scientific), the utterances of caricatured

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[50] The familiar story of Yale-as-crucible is told best in Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983), pp. 19-22; see also Oren, *Our Enemies and US*, p. 140; Inderjeet Parmar, "'To Relate Knowledge and Action': The Impact of the Rockefeller Foundation on Foreign Policy Thinking During America's Rise to Globalism, 1939-1945," *Minerva* 40.3 (2002), pp. 235-263; Philip E. Mosely, "International Affairs," in Warren Weaver, ed., *U.S. Philanthropic Foundations: Their History, Structure, Management, and Record* (New York: Harper and Row, 1967), pp. 375-394; Ó Tuathail, *Critical Geopolitics*, p. 50; Haslam, *No Virtue Like Necessity*, p. 179; Gene M. Lyons and Louis Morton, *Schools for Strategy: Education and Research in National Security Affairs* (New York: Praeger, 1965). The 'rimland thesis' is presented in Spykman, *The Geography of the Peace*, p. 43.

figures of the past (Machiavelli, Hobbes, and so on) and a belief in the preeminence of states enabled a total, certain model of a directly accessible world constructed objectively. This imposition of order and control, and the naturalization of violence through a detached, expert gaze – a distinctly logocentric, masculine trait – enabled the tentative steps toward science of Morgenthau and others to be easily co-opted and expanded by behaviouralists seeking empirical applicability. The state could be secured at the same time as international theory.[51]

I do not invoke masculinity in an offhand manner. The discourse of realist international relations, which anthropomorphized 'the state' as an autonomous, rational actor, a *Homo securitas*, closely paralleled the rise of an "imperial brotherhood" during and after the Second World War. Many of these men shared similar class and educational pedigrees (including boarding schools, men's clubs, and the Office of Strategic Services or other World War Two units). In addition, their liberal internationalism promoted 'toughness', partly as a protective reaction to McCarthyist accusations of susceptibility that employed the language of gendered and sexual failings. "Vital center" liberals, for whom John F. Kennedy was, later, an ideal icon, sought to defend the boundaries of empire and masculine virtue while dramatizing threats to an American body in "alarmist rhetoric" balanced by "patrician stoicism." While employed at the RAND Corporation in the 1950s, Bernard Brodie, who was fascinated with Freud

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[51] See Jim George, *Discourses of Global Politics: A Critical (Re)Introduction to International Relations* (Boulder: Lynne Rienner, 1994), p. 12, 70-71; James Der Derian, "Introduction: Critical Investigations"; J. Ann Tickner, "Hans Morgenthau's Principles of Political Realism"; Hayward Alker and Thomas Biersteker, "The Dialectics of World Order: Notes for a Future Archeologist of International *Savoir Faire*"; and Der Derian, "A Reinterpretation of Realism: Genealogy, Semiology, Dromology," all in Der Derian, ed., *International Theory: Critical Investigations* (New York: New York University Press, 1995), pp. 1-11, 53-71, 242-276, 363-396. The middle two pieces cited from this book were previously published elsewhere – in *Millennium: Journal of International Studies*, and *International Studies Quarterly*, respectively.

and himself undergoing psychoanalysis, circulated a short memorandum comparing divergent war plans with sex. He deemed one scheme avoiding urban targets "premature," while the all-out destructive directive of the Strategic Air Command was something quite different.[52]

Foundations frequently facilitated the narrowing of distances between Washington and academia. In addition to funding research by scholars who moved into policy planning positions, philanthropies backed meetings where the bases of realist international relations were constructed and debated. At one such Rockefeller Foundation-sponsored gathering in 1954, Arnold Wolfers argued that the introduction of "behavioral or psychological aspects" had drawn realism away from abstract schema to "situational components." Generalization, in other words, was no longer drawn from "complex entities such as great powers or empires but could be derived from the study of such abundant simple elements as human demands, expectations, choices, ambitions, fears and reactions to environmental factors, the atoms, ions, and velocities of international politics."[53] Behaviouralism, for Wolfers, was simply a step closer to reality, and made verification of this reality easier. And although the unit of analysis may, in one respect, have shrunk drastically from the empire or state to the individual, this was compromised by the subsequent attachment of individual qualities to states, resulting in

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[52] Robert D. Dean, *Imperial Brotherhood: Gender and the Making of Cold War Foreign Policy* (Amherst: University of Massachusetts, 2001), p. 4, 12, 63; Jon Barnett, *The Meaning of Environmental Security: Ecological Politics and Policy in the New Security Era* (London: Zed Books, 2001), p. 27; Kaplan, *Wizards of Armageddon*, pp. 222-223; Arthur M. Schlesinger, *The Vital Center: The Politics of Freedom* (Boston: Houghton Mifflin, 1949); see also Carol Cohn, "Sex and Death in the Rational World of Defense Intellectuals," *Signs: Journal of Women in Culture and Society* 12.4 (1987), pp. 687-718; K. A. Cuordileone, "'Politics in an Age of Anxiety': Cold War Political Culture and the Crisis in American Masculinity, 1949-1960," *The Journal of American History* 87.2 (2000), pp. 515-545.

[53] Arnold Wolfers, "Theory of International Politics: Its Merits and Advancement," in RG (Record Group) 3.1, Series 910, Box 8, Folder 69, Rockefeller Foundation Papers, Rockefeller Archive Center, Tarrytown, New York, p. 4.

even greater abstraction. Due to their historical character, empires were largely discarded.

At the same meeting, Hans Morgenthau plainly set out the detached, masculine character of geopolitical vision shared by realist theorists. What made a singular theory of international relations possible in the face of ambiguity, he argued, was that both the "mind of the observer and the object of observation" shared the quality of rationality: "foreign policy is pursued by rational men who pursue certain rational interests with rational means." By putting "himself in the place" of one of these statesmen, whether of the past, present, or even future, the observer or theorist could "think as he had thought or is likely to think." The result was a "map of the international scene" – not complete, but filled with the significant features "not affected by historical change." This map was a guide to the successful practice of international relations, indicating "which road is most likely to be taken by certain travelers under certain conditions," and keeping the rational mind on track. Morgenthau acknowledged that a theory of international relations could be "deflected from its rational course by errors of judgment and emotional preferences," *especially* under democratic conditions, but that this rational ideal was a state of mind worth seeking.[54] The striking visual and spatial language of Morgenthau's speech, and its impersonal tone, were precisely attuned to the authoritative subject-position he described.

However diverse, then, 'realism' provided a compass for the generation of Cold War foreign policy. Realism stamped out lingering isolationist tendencies, and justified the maintenance or expansion of power through armament and alliances. It represented

the world outside America as threatening, and encouraged vigilance while tempering excessive bellicosity with the principles of containment. During the 1950s, these latter principles were translated, much to the chagrin of some, from the realm of diplomacy to the hardened discourse of military strategy. Lured by lucrative funding, and no doubt dreams of power and relevance, many academics moved closer to a technocratic consultant role, deepening temporary relationships established during the Second World War. But even the most revisionist interpretations of the Cold War's origins, which wrote against theories of Soviet expansionism or inevitable international rivalry, and instead placed much of the blame on American capitalism, were driven, like their realist opponents, by the postulation of an external "world of fact" without room for self-reflection or critical subtlety.[55]

The Case of Containment

On March 12, 1947, American President Harry S. Truman addressed a joint session of the United States Congress, delivering the first powerful and public assertion of American cold war geopolitical strategy. The 'Truman Doctrine' outlined a specific "situation" integral to both the "foreign policy and national security" of the United States. But a civil war in Greece was also tied firmly to a much broader moral choice between abstract and absolutist notions of freedom and totalitarianism:

> I believe that it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures. I believe we must assist free peoples to work out their own destinies in their own way.... The seeds of totalitarian regimes are nurtured by misery and want. They reach their full growth when the hope of a people for a better life has died. We must keep that old hope alive. The free peoples of the world look to us for support in maintaining their freedoms. If we

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[54] Hans Morgenthau, "The Theoretical and Practical Importance of a Theory of International Relations," in *Ibid.*, pp. 5-6. Paul Nitze, who spoke about his role on the State Department's Policy Planning Staff, joined Morgenthau, Wolfers and others at the conference. Nitze is discussed further below.

[55] Hoffmann, "An American Social Science," pp. 47-48; George, *Discourses of Global Politics*, pp. 83-84.

> falter in our leadership, we may endanger the peace of the world – and we shall surely endanger the welfare of our own Nation.[56]

Truman's dogma, envisioning American values as universal, and implicitly connecting his present to a singular national history of revolution and resistance, was not unique. But it was particularly well suited to a version of the 'Cold War' as a struggle between good and evil systems (cultural, political, economic), individuals, and, not least, spaces. The binary logic of Cold War geopolitics, in other words, effaced the complexities of place and employed "the abstract categories of "the free world" and "the enslaved world" to mentally construct a black and white map of international politics."[57] Geography, where apparent, delineated the territorial boundaries that marked the complete spatial and moral division between a primary, positive inside and a secondary, negative outside.

Discussions of the role of regularized geographical descriptions deployed during the early cold war invariably begin with the writings of the diplomat George Kennan. Kennan was a product of the West – a man who constantly divided the world into two spaces, one occupied by capitalist democracies and the other by foreign despotism.[58] Both Kennan's 'Long Telegram', cabled from Moscow on February 22, 1946, and his article "The Sources of Soviet Conduct," printed in the July 1947 issue of *Foreign*

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[56] Harry Truman, "The Truman Doctrine," in Gearóid Ó Tuathail, Simon Dalby, and Paul Routledge, eds., *The Geopolitics Reader* (London: Routledge, 1998), pp. 58-60; the quotes are from pp. 58, 59, 60.
[57] Gearóid Ó Tuathail, "Introduction: Cold War Geopolitics," in *Ibid.*, pp. 48-57; the quote is from p. 48; Agnew, *Geopolitics*.
[58] Anders Stephanson, *Kennan and the Art of Foreign Policy* (Cambridge, Mass.: Harvard University Press, 1989); Gearóid Ó Tuathail and John Agnew, "Geopolitics and Discourse: Practical Geopolitical Reasoning in American Foreign Policy," *Political Geography* 11.2 (1992), pp. 190-204. In a chapter such as this one, a turn to Kennan, already a very a popular subject of Cold War scholarship, must be done with caution. Ignorance is not an option, but nor is reification, and my intention here is to avoid the latter.

Affairs, stressed the expansionistic *nature* of the Soviet Union, and advocated a policy of the strategic *containment* of communist influence over the globe.[59]

For Kennan, the Soviet Union occupied the negative, alien space of a secondary, threatening Other. Kennan's Long Telegram described the "atmosphere of oriental secretiveness and conspiracy" pervading the Soviet government, produced partly by "the very disrespect of Russians for objective truth – indeed, their disbelief in its existence."[60] One year later, in "The Sources of Soviet Conduct," Kennan linked a determinist history and geography to "the political personality of Soviet power":

> These precepts are fortified by the lessons of Russian history: of centuries of obscure battles between nomadic forces over the stretches of a vast unfortified plain. Here, caution, circumspection, flexibility and deception are the valuable qualities, and their value finds natural appreciation in the Russian or oriental mind.[61]

These disturbing, primordial qualities take shape in the political actions of a (red) flood, "a fluid stream which moves constantly, wherever it is permitted to move, towards a given goal." What is required to limit this flow – which carries with it both suggestions of incontinence and seminal potency – is not negotiation or diplomatic dialogue but a "patient but firm and vigilant containment" that could produce a destabilizing impotence.[62]

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[59] Kennan's two articles are usefully reprinted in Thomas H. Etzold and John L. Gaddis, eds., *Containment: Documents on American Policy and Strategy, 1945-50* (New York: Columbia University Press, 1978), pp. 50-63, 84-90. The original source of the 'X' article is *Foreign Affairs* 25.4 (1947), pp. 566-582. See also Ó Tuathail, "Introduction: Cold War Geopolitics," p. 47.

[60] George Kennan, "Moscow Embassy Telegram #511: The Long Telegram," in Etzold and Gaddis, eds., *Containment*, p. 55. See also Edward Said, *Orientalism* (New York: Pantheon, 1978). For an application of Said's work to foreign policy (making 'foreign'), see Simon Dalby, *Creating the Second Cold War: The Discourse of Politics* (London: Pinter, 1990).

[61] George Kennan, "The Sources of Soviet Conduct," in Etzold and Gaddis, eds., *Containment*, p. 86.

[62] *Ibid.*, pp. 86, 87; Alan Nadel, *Containment Culture: American Narratives, Postmodernism, and the Atomic Age* (Durham: Duke University Press, 1995), especially pp. 15-18; Ó Tuathail, "Introduction: Cold War Geopolitics," pp. 49-50; Joe Painter, *Politics, Geography, and "Political Geography": A Critical Perspective* (London: Arnold, 1995), p. 128.

A longtime admirer of Russian culture's "primitive vitality," Kennan bitterly addressed faltering American-Soviet relations of the immediate post-war period in a language of psychoanalytic pathology, heavily gendered, that also claimed the high ground of realism. He feminized the Russian people, opposing them to a cruel, mentally ill, and "monstrously masculine" Soviet leadership – a government whose lack of reason meant that cooperation was unlikely. Kennan's divisions reflect the dual face of Cold War international relations: the firm application of military reason complemented by the secondary sympathies of communal sentimentalism. He was also a staunch conservative critic of American society, and hoped that some of what he found, or desired, in Russia might by emulated in the emasculated United States. But these aspects of Russian society were not in demand in America after the Second World War, when Kennan answered calls for a clear synthesis of Russian character and Soviet strategic doctrine. His conclusion that the Soviet Union was not primed for war and was weaker than the United States was bypassed for the more provocative picture of a threat responsive only to the "logic of force."[63]

In the binary system of Cold War geopolitics, communism explicitly suggested the Soviet Union, but it was communism more generally – as a doctrine or ideology – that demanded American resistance everywhere. In its self-defined position as *the* world power, the United States could exercise containment, at least theoretically, without

> clearly conceptualized geographical limitations. Its genuine space was the abstract universal isotropic plane wherein right does battle with wrong, liberty with totalitarianism and Americanism with the forces of un-Americanism.[64]

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[63] Frank Costigliola, "'Unceasing Pressure for Penetration': Gender, Pathology, and Emotion in George Kennan's Formation of the Cold War," *The Journal of American History* 83.4 (1997), pp. 1309-1339; the quotes are from pp. 1310, 1331, 1333; Klein, "The Sentimental Culture," p. 158. For a similar approach to NATO's early history, see Costigliola, "The Nuclear Family: Tropes of Gender and Pathology in the Western Alliance," *Diplomatic History* 21.2 (Spring 1997), pp. 163-183.

[64] Ó Tuathail and Agnew, "Geopolitics and Discourse," p. 199

Of course, the significance of containment for many scholars of the Cold War lies far beyond Kennan's theories, resting instead in the 'material' applications of American power. Examples of such applications range from the Truman Doctrine, the Marshall Plan, bilateral aid to Japan, and the formation of the North Atlantic Treaty Organization (NATO) to specific American military interventions in Southeast Asia, Central America, and Africa.

If containment as conceived by American politicians and strategists was originally an economic or a regional program, by the 1950s it had been militarized, globalized, and *naturalized.* This led to a devastating arms race and the shift from limited American 'vital interests' to a geopolitical stage that consisted of Earth itself. But this global vision marks a divergence from Kennan's hierarchical interests: for him,

> wars of national liberation outside the industrial formations of 'the northern temperate zone' were actually supremely uninteresting. The third world, in his view, was incomprehensible to the western mind and best left to its own no doubt tragic fate.[65]

Not surprisingly, then, by 1948 Kennan had largely disavowed his connection to the idea. He had witnessed a practical shift from what was originally a treatise on mechanisms for dealing *politically* with the Soviet Union to a rapidly globalizing military position against world communism based on atomic might. From Walter Lippmann, who warned of "a certain gesture of diplomatic refusal vis-à-vis the USSR," to James

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[65] Agnew, *Geopolitics*; Anders Stephanson, "Comment on an Aspect of Pietz's Argument," *Social Text* 19-20 (1988), pp. 77-83; the quote is from p. 79; John L. Gaddis, *Strategies of Containment: A Critical Appraisal of Postwar American National Security Policy* (New York: Oxford University Press, 1982), p. 56. A thorough exploration of the numerous uses and meanings of containment would reveal a history that stretches before the late 1940s, at least to Roosevelt's presidency and Second World War internationalism. Moreover, Kennan's personal biography can be read as a series of containment episodes. He was also writing missives similar to his two infamous manifestos *before and during* World War II, when his words were effectively ignored. It took a peculiar conjunction of political and cultural circumstances for his theories to reach a mass audience. See Anders Stephanson, "Fourteen Notes on the Very Concept of the Cold War," in Ó Tuathail and Dalby, eds., *Rethinking Geopolitics*, pp. 62-85; Tom Englehardt, *The End of*

Burnham, who denounced containment as passive and lacking in the "properly offensive qualities," the range of public responses to Kennan was tremendous. What prevailed, however, was a rigid and hostile cartography that displaced and expanded Soviet aspirations onto a world map. "After Kennan," Jim George writes, American "foreign policy analysts had a way of reading the Soviet Union that accorded them the *certainty* they craved." All struggles for national self-determination were reinterpreted in terms of overarching geopolitical contests for zones of power, and ultimately for the globe. Kennan denounced the misuse of his work after the American government institutionalized containment as a policy that negated negotiation unless conducted from a position of strength, translating what he hoped would be a "temporary recharge" into a perpetual and accelerating "frozen dialectic."[66]

Across the relatively narrow spectrum of Cold War commentary, strategists and politicians represented the Soviet Union as markedly, irrevocably distinct from the United States – so distinct that in many cases there was little room for negotiation or diplomatic compromise. Rooted in the *foreign* nature of the Soviet Union was a vague, if powerful, threat of an expansionistic communism, always on the verge of leaking out and, ultimately, enveloping America. Because of such related geopolitical abstractions as the 'domino theory', the geographical spread of communism, no matter how distant, was *always* a danger to American security. Some cases, of course, were more crucial than others. By April of 1950, these theories had reached their apotheosis with National Security Council document 68 (NSC-68), a paper prepared primarily by Paul Nitze,

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Victory Culture: Cold War America and the Disillusioning of a Generation (New York: Basic Books, 1995), pp. 91-95.

Kennan's successor as head of the State Department's Policy Planning Staff. Arguing that the Soviet Union desired and required "the dynamic extension of their authority and the ultimate elimination of any effective opposition to their authority," NSC-68 was filled with dramatic, sinister, and active language: the enemy is said to expound "a new fanatical faith, antithetical to our own." By the time Truman approved it in September, events in Korea had "confirmed the validity of its analysis and conclusions." Kennan, who had never endorsed a *global* "zero sum game" in which "gains for communism anywhere constituted, to an equivalent degree, losses for the United States and its allies," had been left behind, his original, more particular arguments distorted, to be sure, but also taken to their logical Cold War conclusions.[67]

Salvation and Security in Science

> Through the [twentieth] century it seemed important to maintain certain boundaries between pure and applied knowledge, between the sciences and society, between experts and the laity. But at the same time the permeability of these boundaries was also stressed: pure sciences were to be applied to human purposes, hinge on the conditions of social order, and thus help integrate lay and expert understanding.
>
> - Simon Schaffer [68]

As strategy moved closer to a self-definition as a science, science impinged significantly on the domain of strategy. "Until the present century," the engineer, physicist, and Cold Warrior Lloyd Berkner declared in a February 1959 speech, "there

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[66] Stephanson, Fourteen Notes," pp. 63, 81; George, *Discourses of Global Politics*, p. 85; William Pietz, "The 'Post-Colonialism' of Cold War Discourse," *Social Text* 19-20 (1998), pp. 55-75; Edwards, *The Closed World*, p. 10.

[67] "NSC-68," April 14, 1950, in Etzold and Gaddis, eds., *Containment*, pp. 385-442; the quotes are from pp. 387, 384; Stephanson, "Fourteen Notes," p. 80; David Campbell, *Writing Security: United States Foreign Policy and the Politics of Identity*, Revised Ed. (Minneapolis: University of Minnesota Press, 1998), p. 23. The differences between Nitze and Kennan, who were friends, was starkly apparent in the debate over the construction of the more powerful hydrogen bomb in the early 1950s; Nitze supported it, and Kennan did not. Most atomic scientists, from Robert Oppenheimer to James Conant, were also opposed to the 'super', with the notable exception of Edward Teller. See Gregg Herken, *Counsels of War* (New York: Knopf, 1985), p. 48; Kaplan, *Wizards of Armageddon*, pp. 74-84.

has been no obvious, or even very noticeable, tie between science and politics." Berkner's astonishing amnesia was made possible by the violent force of the same ties that had been forged during and after the Second World War. To Berkner, the nature of the relationship was clear: science should be "one of the handmaidens to politics – but never a substitute." But when a political value conflicted "with a verifiable scientific conclusion," the roles were reversed, and "society would benefit most by abandonment of that value." The most vexing problems, however, were those that mutually concerned science and politics. These were chiefly those of 'the atom', where the heavily defended and illusionary boundary between C. P. Snow's "two cultures" (insofar as politics, or literature, were said to address "subjective values") was blurred beyond recognition.[69] This was rarely an unquestioned, friendly partnership. The boundaries of science, which stood for the familiar constants of truth and impartiality, were endlessly debated, challenged, and expanded, frequently in the context of Cold War strategic problems that were anything but objectively understandable.

I am interested here, however, in exactly the image that Berkner conjured: how could science, objective and yet submissive, *serve* geopolitics, which was at once more fallible and more pressing? If science was, for Berkner, amoral, then its function depended entirely on social context. Needless to say, this was the perfect, positivist argument for a Cold War American science, autonomous and yet ready to be appropriated for the right normative purpose. Sociologists of science such as Robert

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[68] Simon Schaffer, "What is Science?" in John Krige and Dominique Pestre, *Science in the Twentieth Century* (Amsterdam: Harwood Academic, 1997), pp. 27-41; the quote is from p. 27.

[69] Lloyd V. Berkner, "Science as the Handmaiden of Politics," lecture at St. John's College, Annapolis, 26 February 1959, in Box 18, Lloyd V. Berkner Papers, LOC; see also Berkner, "Science and National Strength," *Bulletin of the Atomic Scientists* 9.5 (1953), pp. 154-155, 180-181; C. P. Snow, *The Two Cultures and the Scientific Revolution* (New York: Cambridge University Press, 1959). The sole Berkner

Merton could thus seek norms of universalism in disinterestedness in science and its ideal environments, and in the next breath conflate it with American democracy. Berkner's use of the 'handmaiden' metaphor was, perhaps, a reformulation of a similar, shocking statement in another speech just three weeks earlier. Nature, he argued, "now gives each of us the equivalent of more than two hundred slaves in the services that energy provides at man's command. We can truly say that science has abolished slavery." How he had arrived at the numerical figure was not clear, although it was presumably the result of an unusual equation. But the implication of this statement was that man's attempt to understand his environment was also the release of a controlling impulse of domination.[70]

This impulse is a familiar trope, most commonly associated with colonial enterprise and related forms of Enlightenment philosophy. In Berkner's case, though, it was put to work not in reference to a particular site, or even a general object dubbed 'nature', but to a global landscape. A prominent participant in the International Geophysical Year (IGY) of 1957-58, and a frequent commentator on space exploration, Berkner projected his version of science onto a terrestrial whole. But he was quite willing to step aside, or even participate, as science rushed to the aid of a more particularistic politics. If Berkner perceived an irony as the American armed forces took a primary role in what he called the "assault on the secrets of the earth" – using military

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biography – and a decent one – is Allan A. Needell, *Science, Cold War and the American State: Lloyd V. Berkner and the Balance of Professional Ideals* (Amsterdam: Harwood Academic, 2000).

[70] Lloyd V. Berkner, Science and International Politics," Kennecott Lecture, University of Arizona, 3 February 1959, in Box 17, Berkner Papers, LOC; David A. Hollinger, "Science as a Weapon in *Kulturkämpfe* in the United States During and After World War II," *Isis* 86 (1995), pp. 440-454; Peter Novick, *That Noble Dream: The "Objectivity Question" and the American Historical Profession* (Cambridge: Cambridge University Press), pp. 296-297; Berkner, "Man Attempts to Understand his Environment," *Journal of Astronautics* 3.3-4 (1956), pp. 53-58.

technology that permitted a reading of natural clues with powers "far beyond the range of our simple senses" – he did not rush to mention it.[71]

My intention is not to single Berkner out, but rather the opposite – to position him within the booming scientific research of the early Cold War, and the technocratic and militaristic impulses that accompanied it. Focusing on one individual, even one so prominent as Berkner, cannot begin to account for the complexity of relationships between scientists, government bureaucracy, the military, politicians, scientific organizations, and other factions that characterized this period of 'big science'. Much of the recent work in what can be labeled the conventional history of science has been devoted to teasing out and connecting filaments of these networks, and to discussing the military's *influence* (positive or negative) on period science. Some of this historical work has a geographical aspect, although it works with a slender definition of spatiality.[72]

During the Second World War, the mobilization of American science for militarism reached a feverish pitch. In his 1941 President's Report, MIT's Karl Compton, writing from the campus with the most at stake in wartime scientific research, perceived "the outlines of an educational and research institution based upon the present ideals and objectives but incorporating a greatly magnified capacity for national service." Compton's vision was realized: by the end of the war, MIT was America's largest university defence contractor, and it maintained that position throughout the Cold War.

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[71] Lloyd V. Berkner, "Assault on the Secrets of the Earth," *The New York Times Magazine* (January 27, 1957), pp. 15, 40, 42-43; the quote is from p. 15; Berkner, "The International Geophysical Year 1957-1958: A Pattern for International Cooperation for Research," address to the American Philosophical Society, 15 November 1956, Box 11, Berkner Papers, LOC. This speech was later published in *Proceedings of the American Philosophical Society* 101.2 (April 1957), pp. 159-163.

[72] See, for example, Robert Kargon and Stuart Leslie, "Imagined Geographies: Princeton, Stanford and the Boundaries of Useful Knowledge in Postwar America," *Minerva* 32.2 (1994), pp. 121-143.

The Institute's annual reports of the 1940s and 1950s are rife with exhortations to meet the "inescapable demand...to serve the national defense and strengthen the free world."[73]

A stroll up Massachusetts Avenue at Harvard, Compton's counterpart James Conant was similarly convinced with respect to the shape of post-war science. He formed a Committee on the Physical Sciences at Harvard during the war, and joined Compton on Vannevar Bush's National Defense Research Committee. These commitments continued into the Cold War. In a 1947 address, Conant outlined a "special sense in which science is called upon to help with out national problems here in this country." To be a nation, Gyan Prakash has written in another context, "was to be endowed with science, which had become the touchstone of rationality," and the nation-state depended heavily on "science's work as a metaphor, to its functioning beyond the boundaries of the laboratory as a grammar of modern power."[74]

The Second World War lent legitimacy to the coupling of science and national interest in the United States, particularly by scientific administrators such as Conant, Compton, and his successor at MIT, James Killian, who were all frequent visitors to Washington. The remarkable list of weapons systems developed during the war – radar, proximity fuses, rockets, and atomic bombs – "formed *guiding symbols* that inspired the strategy of much postwar research." In addition, the war led to the reconstitution of government science funding, notably in the creation of the Office of Naval Research, Atomic Energy Commission, and, slightly later, the National Science Foundation. These

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[73] Karl Compton, "Some Educational Effects and Implications of the Defense Program," *Science* 94.2442 (October 17, 1941), pp. 368-369; the quote is from p. 369; Stuart W. Leslie, *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford* (New York: Columbia University Press, 1993), p. 14; MIT *President's Report* v. 90.2 (1954), MIT, p. 10.

[74] James B. Conant, "The Role of Science in Our Unique Society," *Science* 107.2769 (January 23, 1948), pp. 77-83; the quote is from p. 77; Gyan Prakash, *Another Reason: Science and the Imagination of Modern India* (Princeton; Princeton University Press, 1999), p. 7.

and other agencies funded a series of large, defence-oriented research laboratories, sites for *prescriptive* interdisciplinary research situated between government and academia, and occupied by "proto-Kuhnian" communities of organization men and women. Prominent refugee scholars worked on these projects, and many continued to do so after the war. Some of the less visible technicians required for wartime research graduated from crucibles such as Los Alamos to become Cold War experts and advisors. New standards for secrecy and security were also implemented.[75] But science was also an obvious vehicle for internationalism. Seen in a different light, it respected no arbitrary state boundaries, and this universalism was a logical means of overcoming cultural and political difference.

The atomic bombing of Hiroshima and Nagasaki, and the "profound ambivalence" it engendered among scientists, not least amongst those who had a role in the bomb's creation, spurred many of them to take an active role in American politics. Academic physicists, in particular, were suddenly elevated to the status of magi, yet they had also, S. S. Schweber writes, "tasted sin," and "in the new world they had helped create, they could no longer isolate themselves in their ivory towers from the affairs of the nation." Historians have ably documented this activism, the resulting persecution of many scientists (notably Robert Oppenheimer, but many others as well), and the failure of efforts to gain international control of atomic energy – for a variety of reasons, including American bureaucratic intransigence and anti-communism, as well as Soviet

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[75] Peter Galison, "Physics Between War and Peace," in Everett Mendelsohn, Merritt R. Smith, and Peter Weingart, eds., *Science, Technology and the Military* (Dordrecht: Kluwer Academic, 1988), pp. 47-86; the quote is from p. 50, original emphasis; Hollinger, "Science as a Weapon," p. 446; see also Steven Shapin, "The Invisible Technician," *The American Scientist* 77.6 (1989), pp. 554-563; Roger L. Geiger, *Research and Relevant Knowledge: American Research Universities Since World War II* (New York: Oxford University Press, 1993).

espionage and heavy-handed advocacy of state science.[76] These accounts also connect with related discussions of the relationships forged between science and government, and the constraints placed on scientific research or, conversely, the diversification and power gained by proximity to policy.[77]

Scientific internationalism had at its core a group of common ideals: having created the modern world, science was "universally valuable," removed from cultural and political concerns, anathema to security restrictions and, as a cosmopolitan *lingua franca*, a source of global enlightenment. For Norbert Wiener, the MIT mathematician and cyberneticist who had worked on guidance and tracking systems during the war, the use of the atomic bomb indicted that scientists had been betrayed. As a result, he refused to provide a copy of a 1946 paper "relevant to guided missile technology to the U.S. Air Force." Science, for Wiener and others, should not relinquish its more benevolent hold on this authority to untrustworthy, partial individuals and groups. This was, in effect, a utopian high modernism. Science was a hermetic source of reason that could spread, from its havens in similarly sealed laboratories, to cover the earth, eventually influencing social relations as well. Under inappropriate control, on the other hand, the results could be disastrous. Such was the vision put forward in the tellingly titled *One World or None*,

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[76] S. S. Schweber, "The Mutual Embrace of Science and the Military: ONR and the Growth of Physics in the United States after World War II," in Mendelsohn et al eds., *Science, Technology and the Military*, pp. 3-45, the quote is from p. 5; Alice Kimball Smith: *A Peril and a Hope: The Scientists' Movement in America, 1945-47* (Chicago: University of Chicago Press, 1965); Jessica Wang, *American Science in an Age of Anxiety: Scientists, Anticommunism, and the Cold War* (Chapel Hill: The University of North Carolina Press, 1999), p. 1. One of the major products of, and vehicles for, this activism was the *Bulletin of the Atomic Scientists*, which debuted in November 1945.

[77] For examples of the varying perspectives, see Paul Forman, "Behind Quantum Electronics: National Security as a Basis for Physical Research in the United States," *Historical Studies in the Physical and Biological Sciences* 18.1 (1987), pp. 149-229; Daniel J. Kevles, "Cold War and Hot Physics: Science, Security, and the American State, 1945-56," *Historical Studies in the Physical and Biological Sciences* 20.2 (1990), pp. 239-264. Useful early discussions of the same issues are Louis N. Ridenour, "Military Support of American Science, a Danger?" *Bulletin of the Atomic Scientists* 3.8 (1947), pp. 221-223, and the

a best-selling paperback published by the Federation of American Scientists in 1946. Inside, expert after expert detailed the dangers of atomic energy, although few could elucidate a coherent response beyond the desperate need for international control and dreams of instantaneous world government.[78] But regardless of whether the world was headed down the forking paths of order or disorder, it was clear in texts such as *One World or None* that the most important aspect of international relations was the role of technoscience. The choice, precisely equivalent to the Cold War binary, was one that would rest on the use of systems of knowledge and research. One way or another, however, these were here to stay.

The quest for global scientific governance, outside or at least between the constraints of a world of states, was not that of marginal dreamers. Even policymakers such as Vannevar Bush and James Conant were convinced of the need for scientific internationalism. While they might have differed on the means, such conservatives shared a concern for global stability and a faith in the transformative power of science with intellectual colleagues who espoused alternate political values. Conant and Bush were, after all, also prominent scientists. The communal, universal status of professional science was reaffirmed in the title and substance of Bush's 1945 report to the American President, *Science: The Endless Frontier*, an appeal for the national pursuit of

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replies – from Albert Einstein, Philip Morrison, Aldous Huxley, Robert Merton, Vannevar Bush, and Norbert Wiener, among others – that follow.

[78] Joseph Manzione, "'Amusing and Amazing and Practical and Military': The Legacy of Scientific Internationalism in American Foreign Policy, 1945-1963," *Diplomatic History* 24.1 (Winter 2000), pp. 21-55; the quotes are from pp. 21, 23; Norbert Wiener, "A Scientist Rebels," *Bulletin of the Atomic Scientists* 3.1 (1947), p. 31; Dexter Masters and Katharine Way, eds., *One World or None: A Report to the Public on the Full Meaning of the Atomic Bomb* (New York: McGraw Hill, 1946); Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (Chapel Hill: The University of North Carolina Press, 1994 [1985]), pp. 76-81. On Wiener's wartime work, see Peter Galison, "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision," *Critical Inquiry* 21 (1994), pp. 228-266. For more on cybernetics, see Chapter Four. Even after rebelling, Wiener could not resist "making

autonomous, long-term, basic research. "As early as 1937," Bush's biographer notes, "Bush had said that the quest for knowledge could replace the vanishing geographical frontier as the new source of American freedom and creativity." In its inheritance of the modernist crown, largely as a result of Europe's shattering, the United States "had become not just the center but the *sanctuary* of science."[79]

The space of this science was literally that of the universe and, more practically, the earth. But just as *Science: The Endless Frontier* was a distinctly national vision of scientific progress, the disappearing frontier that Bush evoked was not a well-traveled globe, but Frederick Jackson Turner's boundary zone that was believed to be central to the American condition. According to the 1952 report of a Commission chaired by Karl Compton, "the United States, and, indeed, the whole world, lives in a frontier environment," a condition of unpredictability that "*demands a frontier response.*"[80] One visible reaction, as advocated by the Commission, was universal military training, a plea that did not go answered.

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himself the intellectual spark-plug of [MIT] laboratories that existed only because they served ends that he deplored." Forman, "Behind Quantum Electronics," p. 227.

[79] Manzione, "'Amusing and Amazing and Practical and Military'," pp. 31, 32, original emphasis; Vannevar Bush, *Science: The Endless Frontier: A Report to the President by Vannevar Bush, Director of the Office of Scientific Research and Development, July 1945* (Washington: United States Government Printing Office, 1945); G. Pascal Zachary, *Endless Frontier: Vannevar Bush, Engineer of the American Century* (Cambridge: The MIT Press, 1999 [1997]), p. 223. Conant's equally informed biography is James Hershberg, *James B. Conant: Harvard to Hiroshima and the Making of the Nuclear Age* (New York: Knopf, 1993). Alongside the "shrinking of the areas of unknown territory," Karl Compton noted in a 1950 speech, new forms of frontiers had been opened "for exploration, where less crude and more technical methods have been developed." These scientific spaces, which lent themselves to quantification and "technical evaluation," were also areas of conflict, "in which our maps and knowledge of terrain are far more scanty than in any other major conflict in which our county has been engaged." See "Address of Welcome to the Photogrammetry Society at its Meeting at the Harvard Institute of Geographical Exploration, Thursday, September 21, 1950," *Photogrammetric Engineering* 16 (December 1950), pp. 660-662; the quotes are from p. 660.

[80] *The Price of Liberty: A Condensed Version of the First Report to the Congress by the National Security Training Commission* (Washington: Government Printing Office, February 1952), n. p., original emphasis.

James Conant's vision of science – a singularly influential one – was structured, Steve Fuller argues, in line with the principles of political realism. The immensely destructive aspects of science were accepted as "the price we must pay for health and comfort and aids to learning." There was no separating the two. Moreover, in a binary moral and geopolitical world, criticism was highly risky and incompatible with a stable status quo. At most, it was a challenge for *administration*, and should not continue once a policy decision had been made, since that would imply weakness. A key example of Conant's conviction was his role in the creation of two post-war defences of the atomic bomb's use, one written by Karl Compton and the other by former secretary of war Henry Stimson. Conant, along with Vannevar Bush and Paul Nitze, also went on to take charge of the Committee on the Present Danger, an advocacy group of establishment figures set up to warn the public of the Soviet threat and support the implementation of NSC-68. Given this background, it is not surprising that Conant was also fond of transferring military language into the domain of science. His 'Nat Sci 4' course, created in 1947, sought to instruct students in scientific "tactics and strategy." He believed that the future of science – and of modernity – was synchronous with the future of the United States, and that if correctly conducted, science would defend against a looming Dark Age.[81]

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[81] James B. Conant, *On Understanding Science: An Historical Approach* (New Haven: Yale University Press, 1947), Chapter 4; Steve Fuller, *Thomas Kuhn: A Philosophical History for Our Times* (Chicago: The University of Chicago Press, 2000), pp. 150-178; Philip Mirowski, *Machine Dreams: Economics Becomes a Cyborg Science* (Cambridge: Cambridge University Press, 2002), p. 156; Barton J. Bernstein, "Seizing the Contested Terrain of Early Nuclear History: Stimson, Conant, and Their Allies Explain the Decision to Use the Atomic Bomb," *Diplomatic History* 17.1 (Winter 1993), pp. 35-72; Jerry W. Sanders, *Peddlers of Crisis: The Committee on the Present Danger and the Politics of Containment* (Boston: South End Press, 1983). The CPD's second, Reaganite, incarnation is the subject of Dalby, *Creating the Second Cold War*. One of Conant's 'Nat Sci' tutors was Thomas Kuhn.

Contrary to the pronouncements of some, America had not become scientific; science had become American, or, more usefully, geopolitical. Even if viewed as apolitical, science had been harnessed cleverly to Cold War policy, resulting in a poor internationalist track record, notwithstanding the valiant efforts by certain American and Soviet scientists to seek out commonalities and reduce oppositional tensions. The geopolitical character of American scientific pronouncement, on the other hand, was epitomized by President Eisenhower's "Atoms for Peace" address to the United Nations General Assembly on December 8, 1953. Speaking in the "new language" of atomic war, Eisenhower admitted that his recitation of danger was American in basis, but that the subject was global in character. Following a UN suggestion, Eisenhower proposed the formation of an "international atomic energy agency" to which the Soviet and American governments would make contribute fissionable material. The agency would then allocate this material "to serve the peaceful pursuits," or the "needs rather than the fears" of humans, from agriculture and medicine to atomic power.[82]

'Peace', for Eisenhower, was equivalent to waging the Cold War. It was a word used to restrain troubled allies, who the United States might share valuable scientific information with, and placate the American public. Having indicated to the world that the United States remained superior in strength, Eisenhower hoped to get the Soviet Union – which he described, to Winston Churchill, as a "woman of the streets" that needed to be driven "off her present 'beat'" – to accede to stockpile reductions that would further America's relative position. Using the universal benefits of science, Eisenhower actually attempted to score a psychological victory by placing the onus on

[82] "Dwight D. Eisenhower's 'Atoms for Peace' Speech," in Ira Chernus, *Eisenhower's Atoms for Peace* (College Station: Texas A&M University Press, 2002), pp. xi-xix; the quotes are from pp. xii, xvii, xviii.

Moscow. By converting the bomb into a global symbol of peace and progress – what scientists had been pressing for since 1945 – while maintaining an acceptable level of fear at home through "apocalypse management" and the perpetuation of an antagonist, Eisenhower hoped to gain an upper hand in the control of Cold War enmity. But this was a precarious discursive construction: Eisenhower could not avoid including the United States, along with the Soviet Union, in front of what the he called "the dark background of the atomic bomb." As peace became war, national security became national insecurity, reflected in Eisenhower's 'New Look' strategy premised overwhelmingly on nuclear weapons. Eisenhower's speech – and similarly duplicitous Soviet proposals – ensured the perpetuation of the Cold War dualism, its arms race, and promised diplomatic negotiations that were set up to fail. And by affirming the mythic power of atomic energy in the "peaceful uses of atomic energy" campaign that followed his presentation, Eisenhower also reminded listeners that "good atoms," as *Time* dubbed them, were dialectically related to the bad. Whether utopian or dystopian, the atom carried "transmutational power."[83]

Exhibiting Culture

The integrationist, universal trends found in mid-century American science, geopolitics and culture were certainly selective, and consistently projected outward from a supposed space of enlightenment and forward vision. Nonetheless, globalism was invariably accompanied by a holism, even if this invariably concealed a primary

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[83] Chernus, *Eisenhower's Atoms for Peace*, pp. 9, 94, 105, 124-126; Spencer Weart, *Nuclear Fear: A History of Images* (Cambridge: Harvard University Press, 1988), pp. 171-176, 424; Manzione, "'Amusing and Amazing and Practical and Military'," pp. 46-48; H. W. Brands, "The Age of Vulnerability: Eisenhower and the National Insecurity State," *The American Historical Review* 94.4 (1989), pp. 963-989;

nationalist undercurrent. From the Universal Declaration of Human Rights, adopted by the United Nations in New York on December 10, 1948, to Edward Steichen's much-discussed and successful 'Family of Man' photographic exhibit, with its overt references to the United Nations and the horrors of war, the equality of human experience was asserted in response to the divisiveness of modern totalitarianism and nationalism. Steichen described his project, first displayed at New York's Museum of Modern Art, as "a mirror of the universal elements and emotions in the everydayness of life – as a mirror of the essential oneness of mankind throughout the world." Many of the images, drawn from a variety of photographers, directly portrayed human-environment relations; nature, and the natural quality of 'man', was used as a constant.[84]

Interestingly, Steichen had worked as for the Army Signal Corps in World War I, when he was an early exponent of aerial photography, and for the Navy in World War II, leading a photographic unit in the Pacific. His intention on the latter mission was to capture "the actuality of war," by documenting its humanity through images of individual soldiers. That these subjects instead behaved as if they were "on stage" is one of the great ironies of military photojournalism, and in World War II, Stiechen's work was a small part of a massive documentary effort. Like the proliferation of maps and geographic discussions noted earlier, photography became a key vehicle for views of unfamiliar landscapes – the stages of war. Tacking between maps, photographs, and other sources, domestic observers could travel with the war, and in the process arrive at a better sense, positive or otherwise, of America's new international responsibilities. But as the globe returned to America in exhibits such as The Family of Man (which featured

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Marc Trachtenberg, "A 'Wasting Asset': American Strategy and the Shifting Nuclear Balance, 1949-1954," in his *History and Strategy* (Princeton: Princeton University Press, 1991), pp. 100-152.

the work of many photographers who had traveled to the front), an American globe was promoted internationally. The United States Information Agency (USIA) "toured the photographs throughout the world in five different versions for seven years after the closing of the original display." As it was first exhibited, however, Steichen's collection targeted American middle classes who were not only the driving force behind American economic expansionism, but who were also the consumers of much of the commentary on American culture, whether in the more academic discourse of a developing 'American Studies' or in the pages of influential periodicals such as *Life*.[85] In the context of the territorial trap or state-based realism discussed above, global projections were always already premised on the presence of a national body, bounded spatially and culturally. A similar, if slightly more benign, statist internationalism was also the basis of the United Nations.

Henry Steele Commager's *The American Mind* (1950), one of the more influential texts on national character, captured the uneasy global position of America and its humanized qualities aptly:

> Although still persuaded that his was the best of all countries, the American of the mid-twentieth century was by no means sure that his was the best of times...he was no longer prepared to insist that the good fortune which he enjoyed, in a war-stricken world, was the reward of virtue rather than of mere geographical isolation. He knew that if there was indeed any such thing as progress it would continue to be illustrated by America, but he was less confident of the validity of the concept than at any previous time in his history.[86]

The post-war period was a challenge to the unique and unifying character ascribed to the American personality, and one way to redeem these timeless traits was to appeal, as

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[84] Edward Steichen, *The Family of Man* (New York: Museum of Modern Art, 1955), p. 4.
[85] Eric J. Sandeen, *Picturing an Exhibition: The Family of Man and 1950s America* (Albuquerque: University of New Mexico Press, 1995); the quote is from p. 4; see also Alan Sekula, "The Instrumental Image: Steichen at War," *Artforum* 14.4 (1975), pp. 26-35. As Sandeen notes (p. 9), *Life*'s circulation in the mid-1950s was about 6 million, and its photographs, some of which were used by Steichen, overwhelmingly depicted the white, middle-class nuclear family.

Steichen did, to the universal threat of Armageddon. Removing any contexts from his chosen images, Steichen presented a depth-less, sentimental humanism, or mass mediated modernism, that was immediately challenged from the right for its reification of the exotic and primitive, and from the left for its "smug Western view of the world." These challenges continued, unabated, into the 1960s and 1970s.[87]

The identification and classification of cultural interventions such as The Family of Man was an exercise in cultural cartography and naming that lent the taxonomist an aura of authority. Steichen's exhibit, if less overt in tone, did not escape this placement: its own way of seeing was through the lens of "the nuclear family attempting to live out the implications of this pun in a new world in which to survive meant to discover the enduring elements of human behavior." But it was precisely the exhibit's wide appeal that allowed it to transcend the narrow and often preposterous designations such as 'middlebrow' or 'kitsch', categories that had even less merit in the many international locations it visited. Nor was The Family of Man, with its relatively muted American ethos and anti-nuclear stance, a perfect vehicle for propaganda purposes abroad, but that did not stop the USIA from reconfiguring it slightly to match regional circumstances.[88] In so doing, the exhibit became a rather innocuous Cold War vehicle, an impassioned statement of universalism that bore a 'made in America' tag.

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[86] Commager is quoted in Sandeen, *Picturing an Exhibition*, p. 7.

[87] *Ibid.*, pp. 58, 74-75; David A Hollinger, "From Species to Ethnos," in his *Postethnic America: Beyond Multiculturalism* (New York: Basic Books, 1995), pp. 51-77. One of the more incisive criticisms of the exhibit came from Roland Barthes, who saw Steichen's show in Paris in 1956. Decrying the "ambiguous myth" of human unity, Barthes argued that this myth was produced by an initial staging of exoticism and difference, followed by a miraculous identification of "a common mould." The result, also manifest in the captions that accompanied photographs, was a history-less "reign of gnomic truths," such as birth, death, and, most tellingly, work: "For these natural facts to gain access to a true language, they must be inserted into a category of knowledge which means postulating that one can transform them, and precisely subject their naturalness to our human criticism." Roland Barthes, "The Great Family of Man," in his *Mythologies*, trans. Annette Lavers (New York: Hill and Wang, 1972), pp. 100-102; the quotes are from pp. 100, 101.

Among the destinations for The Family of Man was Moscow's Sokolniki Park, as part of the American entry in a summer 1959 exchange of exhibitions; the large American display followed a Soviet effort in the New York Coliseum. The shows – mostly of shiny commodities and technological models that overwhelmed the increasingly timeworn photography of Steichen's display – served as a sort of temporary invasion, for the goods on display were not innocent artifacts of metal and plastic, but ideological projectiles inserted with care and deliberation into a hostile space. Ideas, in other words, were being presented in the form of artifacts. Using typical period diction, *Newsweek* dubbed the consumerist combat "a contest of two diverse ways of life – of modern capitalism with its ideology of political freedom and Communism."[89]

One major American weekly noted that the Soviet display produced a comprehensive visual *picture* of "Russia's position in the world."[90] Industrial units, cars, fashions, and a model two-bedroom apartment supplemented a scale reconstruction of Sputnik I, the space vehicle launched in 1957 – and the cause of significant American alarm. Domestic media sources, from *Newsweek* to *Time*, derided the "propaganda," in the form of "representational paintings glorifying the joys of Communist life," only slightly less than the "clumsy" and dated attempts to copy Western consumer goods. Inside the apartment "the paint easily rubs off the prefabricated walls. The furniture is frail and imitative...the stove is so small that the oven would cramp a large chicken."[91]

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[88] Andrew Ross, "Containing Culture in the Cold War," in his *No Respect: Intellectuals and Popular Culture* (New York: Routledge, 1989), pp. 42-64; Sandeen, *Picturing an Exhibition*, pp. 72, 119.
[89] Cited in Stephen J. Whitfield, *The Culture of the Cold War* (Baltimore: The Johns Hopkins University Press, 1991), p. 72; Sandeen, *Picturing an Exhibition*, Chapter Four.
[90] "Red Sales," *Time* (July 6, 1959), p. 14.
[91] *Ibid*; "Peaceful Coexistence," *Time* (July 13, 1959), pp. 10-13; Henry Hazlitt, "Portrait of Russia?" *Newsweek* (July 20, 1959), p. 81.

Despite these many faults, noted *Time*, "the fact was that [the exhibition] mirrored not life today but a combination of genuine achievements (e.g., in the sciences) and a happy dream of the future."[92] Citing similar "wishful dreams," *Newsweek*'s Henry Hazlitt also produced "real facts on output," leading him to label Russian claims of equality in living standards "ludicrous." Nonetheless, he warned,

> we should carefully distinguish between production for peace and production for war. In the latter Russia has made giant technological strides – precisely because she has put that goal first. And in propaganda she is enormously our superior. She can put on an exhibition that gives false impressions of merit, whereas our own exhibition at Brussels exhibited and apologized for our slums, and the new one at Moscow will have a painting lampooning our generals.[93]

For some in the American media, the 'truthful' projection of American culture and democratic values outside the boundaries of the state served as a *hindrance* in the ideological contest of the cold war.

The contrast between representations of clarity and deception was reinscribed when *Newsweek* dubbed Vice-President Richard Nixon's subsequent trip to the Soviet Union a voyage "into the red shadowland."[94] In Moscow to officially open the American exhibition at Sokolniki Park and to assess Soviet leadership, Nixon participated in a series of remarkable confrontations with Soviet leader Nikita Khrushchev over the space of the park grounds. Motivated by a set of new, active film equipment, the two politicians, surrounded by a large crowd of male aides and journalists, began to debate. Their words were shaped by the stages through which they traveled: from an impromptu television studio to the kitchen of a $14,000 model home that, according to Nixon, "any

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[92] "Peaceful Coexistence," p. 11.
[93] Hazlitt, "Portrait of Russia?" For a particularly geographical analysis of propaganda and the Cold War, see Pickles, "Texts, Hermeneutics and Propaganda Maps."
[94] "Into the Red Shadowland," *Newsweek* July 27, 1959, pp. 39-42.

steelworker [could] afford."[95] It was in this quintessentially domestic space, framed by both the latest American appliances and a woman commissioned to demonstrate their features, that "the kitchen debate" transpired (Figure 4). According to Steven Whitfield,

> Khrushchev repeatedly predicted that the Soviet Union would soon overtake the American economy and win the brass ring of world influence. Nixon preferred to focus on the fetishism of commodities and tried to steer the conversation to color television sets. The vice-president's persistence paid off when the debaters reached the model kitchen, and washing machines became apropos. Nixon praised the freedom of choice among American housewives. Khrushchev countered that one kind of machine would be sufficient, if it worked. "Isn't it better to talk about the relative merits of washing machines than the relative strength of rockets?" Nixon inquired. "Isn't this the kind of competition you want?" The Soviet premier angrily replied that America was pursuing both types of competition...[96]

The deeply gendered discussion concluded with these words from Khrushchev: "Thank the housewife for letting us use her kitchen for our argument."[97]

The kitchen debate indicates two connections that must necessarily be made in any discussion of popular geopolitics. First, the dynamics of the conversation and the silent presence of the model housewife served to reinforce the masculine culture of diplomacy during the cold war. Venturing into the feminized space of the kitchen, Nixon and Khrushchev inscribed stereotypical gendered roles and positioned themselves as protectors of their national women and feminized home-spaces. Later, at a separate $250,000 electronic kitchen staffed by a similar model, Nixon pointed to a panel-controlled washing machine, noting that "in America, these are designed to make things easier for our women," and stressed the universal benefits of such an "attitude towards women." That evening, searching for an agreeable subject to celebrate, the two leaders

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[95] "Better to See Once," *Time* August 3, 1959, pp. 11-16.
[96] Whitfield, *The Culture of the Cold War*, pp. 73-4.
[97] "Better to See Once," pp. 14-15.

found one: "We can all drink to the ladies."[98] The 'we', of course, represented an overwhelmingly male group of politicians and media members.

Second, the confrontation of leaders points to the extensive links between broad issues of foreign policy and domestic spaces – in both senses of the term. Khrushchev's remark about "both types of competition" is more productively conceived as two fronts produced from a singular source. From General Electric and Goodyear to Westinghouse, a number of large American companies controlled the mechanisms of both production and destruction, typically manufacturing similar products for the home and the military from the same location. The consumer goods praised by Nixon represented basic American tenets: both the housewife's *freedom* from labour and the democratic *opportunity* to select a suitable appliance from a virtually unlimited assortment. Science and politics were best expressed in the terms of consumerism. In his remarks at the exhibition's opening, Nixon claimed that the items on display revealed America's proximity to "the ideal of prosperity for all in a classless society," a clear dig at his hosts.[99]

Other entries in the Moscow exhibition were revealing. A six-room home, "prefabricated on Long Island," was similar to the structures of the suburban boom. Suitable middle-class families were chosen carefully as models and participants. IBM's RAMAC computer was set up to answer thousands of questions about the United States

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[98] "Encounter," *Newsweek*, August 3, 1959, pp. 15-19; the quote is from pp. 16. See also Elaine T. May, *Homeward Bound: American Families in the Cold War Era* (New York: Basic Books, 1988), Chapter One. The limited attention given to Pat Nixon, the vice-president's wife, in accounts of their visit to the Soviet Union was centred on the contents of her wardrobe.

[99] Whitfield, *The Culture of the Cold War*, p. 74; Karal Ann Marling, *As Seen on TV: The Visual Culture of Everyday Life in the 1950s* (Cambridge: Harvard University Press, 1994), p. 243; Sandra Buckley, "A Guided Tour of the Kitchen: Seven Japanese Domestic Tales," *Environment and Planning D: Society and Space* 14 (1996), pp. 441-461; Sandeen, *Picturing an Exhibition*, p. 4; "Remarks of the Vice President of

and, notably, tally the most popular choices. A variety of new automobiles were placed next to homes, camping grounds, and farm displays. Unlike the materiel of heavy industry and science brought by the Soviets to New York, the everyday objects of 'ordinary' American abundance were in full bloom at the Moscow grounds. But individuals and goods were secondary, according to the *New York Times*, to a "confrontation of two civilizations" which had subsumed the historical anthropology of The Family of Man beneath the futurist dimensions of capitalism and new military technologies.[100]

Timothy Mitchell has noted that nineteenth-century European exhibitions were sites for the reproduction of "imperial truth and cultural difference in 'objective' form."[101] While populated with very different artifacts drawn overwhelmingly from imperial centres, the cold war exhibitions of 1959, supported by an authoritative contingent of visiting politicians, stood for a very similar version of representative certainty. As propaganda, in other words, they depended paradoxically on the claim of realism. Moreover, both the United States and the Soviet Union engaged in imperial activities. The battle for ideological supremacy was contested in *deferred space*, set outside the territorial boundaries of either power. Thus if it was certain that the complementary exhibitions represented a truthful picture of Soviet and American life, respectively, it was by no means guaranteed that one exhibitionary order would triumph over the rest of the globe. What visitors to the New York Coliseum and Sokolniki Park experienced were two uncannily similar models of a world-as-exhibition, spectacles

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the United States, Richard Nixon on the occasion of the opening of the American National Exhibition in Moscow, Sokolniki Park, July 24, 1959," MC 420, Box 6, Folder 197, MIT, p. 2.

[100] Sandeen, *Picturing an Exhibition*, pp. 128, 136-137, 155.

suggesting that, if uncontested, they would (and should) envelop the world in a form of totalizing vision.

Conclusion: America, Modern

On January 25, 1947, Simone de Beauvoir left France for the United States, where she spent almost four months. Her journey was a temporal movement from old to new, but also a geographic passage *beyond* a certain spatial reality, into an "autonomous, separate world" – into the future. Conversely, her return to Europe was, at least initially, a depressing one, full of old customs officers "in their crumpled uniforms," poorly dressed, "humiliated" Parisians walking the "dreary," "numbed," "dark and morose" streets. "Over there in the night, a vast continent is sparkling," she concluded, and from this contrast it is clear that she had witnessed the beginnings of a new world in the bright, brash landscapes of the United States.[102]

To be in America after the Second World War "was not only a matter of taste, but to live where the future was unfolding: to live now what others would soon be forced to live." This did not only apply to the many émigré scientists and strategists who had found new homes within military research. As Serge Guilbaut has documented in some detail, the "cultural center of the West" shifted from Paris to New York after the War. At the time of de Beauvoir's visit to the United States, art and other forms of culture were becoming significant factors in the political and economic discourses of a developing Cold War internationalism. The increasingly depoliticized creations of American avant-garde abstract expressionists (the 'New York School') were, ironically, a perfect symbol

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[101] Timothy Mitchell, "The World as Exhibition," *Comparative Studies in Society and History* 31 (1989), pp. 217-236; the quote is from pp. 222.

for the washed-out culture of the "new liberalism." The connection between art and the atomic age was made explicit in a 1946 *Fortune* article that juxtaposed two abstract paintings with a story on the atomic test at Bikini. Guilbaut argues that the bomb had revealed the powerlessness of the individual:

> traditional languages, including the languages of maps and graphics, were no longer capable of giving full expression to the realities of a nuclear world. Only abstract art could communicate the new meaning of human experience, the incredible feeling of total disintegration.

Although 'political debate' was still a meaningful phrase, the period 1946-48 was also a schizophrenic one of "deep-seated confusion," "impossible alternatives," and a retreat into empty mythological primitivism. The alienation that many existentialists heralded became an American "way of being."[103]

Yet many – though not all – members of this diverse and shifting cultural circle crossed from their earlier ideological faiths to a disillusioned post-war neoconservatism "based on reason, analysis and pragmatism." While there were merits to this shift, such as an opposition to the worst forms of totalitarianism, an overwhelming number of intellectuals either supported or were yoked to an invigorated national "containment culture" of consensus. Theirs was a serviceable elitism, one that, while certainly opposed to such Cold War movements as Joseph McCarthy's xenophobic populism, also preserved the "channels of power through which intellectual authority is exercised" and limited the threatening manifestations of direct democracy and 'masscult'. Abstract expressionism,

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[102] Simone de Beauvoir, *America Day by Day*, trans. Carol Cosman (Berkeley: University of California Press, 1999), pp. 3, 13, 390.

[103] Timothy Brennan, *At Home in the World: Cosmopolitanism Now* (Cambridge: Harvard University Press, 1997), p. 222; Serge Guilbaut, *How New York Stole the Idea of Modern Art: Abstract Expressionism, Freedom and the Cold War*, trans. Arthur Goldhammer (Chicago: University of Chicago Press, 1983), pp. 1, 3, 96, 106-7, 113, 158. In his *Modern Times, Modern Places: Life and Art in the 20th Century* (London: Thames and Hudson, 1998), Peter Conrad makes Brennan's point even more starkly: "While one world ended in Europe, another began in America" (p. 501).

for one, was staunchly backed by New York's Museum of Modern Art (itself supported by the Rockefeller family), which organized international tours of paintings by artists such as Jackson Pollock and Willem de Kooning. The universality of their explosive, seemingly apolitical canvases, designed to appeal to all individuals, was equally an ideal statement of national culture, a gendered and racialized expression of American leadership.[104]

The narrowing of modernism's adversarial qualities after the Second World War, and the incorporation of the 'avant-garde' into a liberal geopolitical and geoeconomic order, was not limited to a select group of New York artists and writers. The substantial achievements of the CIA's cultural propaganda program in Europe, which depended heavily on a consortium of intellectuals who ran journals, exhibitions, and conferences, has been superbly documented by Frances Stonor Saunders and others. Whether these individuals were aware of their links to the CIA or not, they gladly cast aside their nearly ubiquitous leftist roots and went to work for America, the "new Weimar." Their efforts surpassed the limited audiences of criticism; in 1953, the Congress for Cultural Freedom, the CIA's main vehicle, sponsored a substantial multinational meeting on "Science and Freedom," as part of the continuing efforts to "establish the disinterested search for objective truth as the distinctive epistemological posture of the Free World."[105]

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[104] Ross, "Containing Culture," pp. 42-43, 60; Neil Jumonville, *Critical Crossings: The New York Intellectuals in Postwar America* (Berkeley: University of California Press, 1991), p. xii; Nadel, *Containment Culture*; Eva Cockroft, "Abstract Expressionism, Weapon of the Cold War," *Artforum* 12.10 (1974), pp. 39-41; Christine Sylvester, "Picturing the Cold War: An Art Graft / Eye Graft," *Alternatives* 21 (1996), pp. 393-418.

[105] Andreas Huyssen, *After the Great Divide: Modernism, Mass Culture, Postmodernism* (Bloomington: Indiana University Press, 1986), pp. 190, 193; Frances Stonor Saunders, *Who Paid the Piper? The CIA and the Cultural Cold War* (London: Granta, 1999), p. 3; Novick, *That Noble Dream*, p. 295; Hugh Wilford, "Playing the CIA's Tune? The *New Leader* and the Cultural Cold War," *Diplomatic History* 27.1 (2003), pp. 15-34.

The language of an American citadel in an uncertain world was also, of course, precisely that used by Cold War geopolitics and science. The dangers of nuclear annihilation, according to Hanson's Baldwin, had to be "localized," in order to solve "the problem of preserving and perpetuating American man and Western civilization."[106] Modernism's slide into apolitical abstraction did not exactly require an existentialist cartography. Just as abstract art could be used to wage the Cold War, in international relations and scientific advocacy the dizzying possibilities of an atomic globe wore off quickly, and anxieties were channeled or rationalized, at least for a time, through the imagery of national militarism. What was startling was that the brush strokes remained the same.

[106] Baldwin, *The Price of Power*, pp. 4, 5.

Part Two: Regional Intelligence

Chapter Two – War on Areas

> To mention area studies is another way of saying that the United States of America has become more mindful of the international expansion of its interests.... Area studies may only be a covering term for a more effective mapping of the world for the purpose of imperialistic penetration and ultimately of war. The growth of area studies may mean that science is to be bent to motives that are extra-scientific and even anti-scientific in character. This would be German Geopolitics with a vengeance.
>
> - Werner J. Cahnman, 1948[1]

Introduction

For Americans, the global span of the Second World War prompted tremendous interest in 'distant' parts of the world. This attention prompted a quest for geographic knowledge that frequently sought a rationalization and familiarization of non-American landscapes for military interests. Because every place, and every *type* of place, possessed a potential strategic purpose, the globe and its component parts entered into the schematic language of geopolitics, but also surfaced in more intricate discussions of intelligence-gathering and war-planning. Across the interconnected landscapes of military, industrial, and academic research, the systematic study of regions, with an eye to their strategic value, emerged as a subject of extraordinary significance. These regions – and some were clearly more important than others – became testing grounds, places where the global ambitions of American militarism and social science could be localized in environments that were, it was argued, delimited and uniform. This geographic 'truth' made them more manageable and legible.

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[1] Werner J. Cahnman, "Outline of a Theory of Area Studies," *Annals of the Association of American Geographers* 38.4 (1948), pp. 233-243; the quote is from 233-234. This was one of the few *Annals* articles to directly address area studies, and Cahnman was a sociologist by training. His intention was not to lambaste area studies, but to ensure that it was conducted within the realm of 'science'. The danger, as he put it (p. 234), was that amongst the "present scattered efforts at area studies...a theory, or body of concepts, is not in evidence" – unlike (his example) nuclear physics. In this respect his commentary was hardly a subversive one.

The diffuse idea of 'regions' is a very old one, and figures prominently in histories of geography.[2] But it is prominent precisely because of the multiple meanings of the term. A key distinction is often made between a descriptive regional geography, or *chorography*, and the place-less *functional* study of spatial laws. Intriguingly, although traceable to ancient Greece, a modern divide between these two understandings of space is frequently positioned on or just after the Second World War. A consideration of this war and its aftermath, however, should give pause to those who attempt to pry apart types of geographical study and render them epochal. There is little doubt that pre-war conceptions of regions overwhelmingly lacked a theoretical exactitude and gestured only weakly to the region as an object of social science, and, second, that after the war regions were increasingly detached from any understanding of a physical terrain.

The concept of a 'paradigm' has at least one valid component: the argument that those who search for new intellectual approaches define themselves, to a degree, against an earlier generation of theories and individuals. This divide is an artificial one, of course, a strategic means of simplification, but it is nevertheless a powerful discursive construct for those that employ it, and should not be discounted by critical historians. But those who recognize and blur such rifts, as in the case Geography's so-called 'quantitative revolution', should also consider the artificiality of disciplinary boundaries. Consider that pre-war economics textbooks were overwhelmingly textual and descriptive. Over the second half of the century, these guides became crowded with graphs and equations, resembling more of a "discourse on method" for an increasingly "technical

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[2] For one useful take, see Nigel Thrift, "Taking Aim at the Heart of the Region," in Derek Gregory, Ron Martin, and Graham Smith, eds., *Human Geography: Society, Space, and Social Science* (Minneapolis: University of Minnesota Press, 1994), pp. 200-231. Despite his title, Thrift does not address its military implications, with the exception of a brief mention in reference to Paul Vidal de la Blache.

subject."[3] A similar shift also underwrote the new area studies, whose advocates quietly borrowed certain worthwhile techniques from their pre-war ancestors while disparaging them as atheoretical. There was little borrowing from Geography; aside from a general regional awareness, it lacked the 'tools' of the new regional study. A concern with internal debates is thus multiply futile. Moreover, the regions that interest me are neither rural nor urban, but geopolitical, and explicitly combined to form a global strategic whole. These environments were both bounded *and* functional, characterized by archaic conceptions of culture and place but examined in the cool light of scientific abstraction. More importantly, both approaches were compromised, and thus brought together materially and epistemologically, by the exigencies of militarism.

In a 1943 report, "World Regions in the Social Sciences," the Social Science Research Council (SSRC) postulated that social scientists with knowledge of the various regions of the world were almost as important, and rare, as the officers familiar with combat in those zones, and that the development of effective area study was dependent on the "establishment of research and graduate instruction." However, those who organized these programs also needed to counter what was perceived to be an absence of language abilities and cultural awareness, not just among recruits and the public at large, but within the academic community as well. Not only did American intellectuals lack foreign knowledge, but they were also short of the skills required to produce and evaluate this knowledge. The "enlarged spatial concepts" and more comprehensive global wisdom required of America – as a national whole – could, the report went on to claim, be found by reducing, or focusing, the laws of the social sciences to a manageable scale.

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[3] Carl E. Schorske, "The New Rigorism in the Human Sciences, 1940-1960," in Thomas Bender and Carl E. Schorske, eds., *American Academic Culture in Transformation: Fifty Years, Four Disciplines*

In this respect, regional study could also operate similarly to a "case method," reducing the sinful "temptation toward vague generalities" while concurrently encouraging the much-desired lessening of the compartmentalization that beset disciplines.[4]

The SSRC report, written by Council staffer Earl Hamilton, was the first publication of the Council's Committee on World Regions, which was established in January 1943. The document included a description of "social laws as relative to time, place, and circumstance," and noted the resulting "precision" that could be gained if the social sciences turned to intensive, comparative "study of concrete areas." In Council discussions of Hamilton's paper, the psychologist Albert Poffenberger noted that the grounded nature of social science distinguished it from independent physical sciences and their homogeneous laboratory environments. The social sciences, Poffenberger added, should seek a similar global generalization, so as to affirm tentative regional laws – a contribution that would extend well past the immediate context of wartime problems.[5] Hamilton's brief manifesto and the debates that followed contained the early versions of arguments that were echoed and expanded within the area studies community for at least the next ten years.

(Princeton: Princeton University Press, 1997), pp. 309-329; the quotes are from pp. 309-310.

[4] "World Regions in the Social Sciences" (May 1943), prepared for the Committee on World Regions, Social Science Research Council, by Earl J. Hamilton, in RG 87 (Records of the Ethnogeographic Board), Box 21, Folder "Committee on World Regions", Smithsonian Institution Archives (hereafter SIA), pp. 1, 11, 20-21. A similar claim was made by Robert B. Hall in 1947 (see Chapter Three): "There is hope that the fact concerning a small, well-known area may prove acceptable where agreement on a universal basis too often had failed to be achieved." Hall, *Area Studies: With Special Reference to their Implications for Research in the Social Sciences* (New York: Social Science Research Council, 1947), p. 27.

[5] Hamilton and Poffenberger are quoted in the bound volume, *Committee on World Regions, 1943; Joint Exploratory Committee on World Area Research, 1945-1946; Committee on World Area Research, 1946-1953*, Accession 1, Series 1, Subseries 19, Box 229, Folder 1386, SSRC Papers, Rockefeller Archive Center, Tarrytown, New York (hereafter SSRC); the quotes are from p. 6.

The apparent lack of cosmopolitan experience among Americans unprepared "for life in the spherical world"[6] – a condition invoked endlessly by various 'experts' – necessitated efforts to accumulate scraps of information, rosters of the well-traveled, and, most importantly, interdisciplinary teams of actual scholars judged to be competent. These components were all assembled in a cluster of wartime clearinghouses, sites for the collection and dissemination of war-related data. The establishment of these imbricated *archives*, which were both physical and virtual, was prompted by a pragmatic, if slightly paranoid belief that almost any photograph, article, narrative, or statistic pertaining to a particular theatre of combat might just be useful – precisely the imperative that lies at the heart of the intelligence industry. The scale of the Second World War, after all, was such that the relevant organization might receive one question concerning the fireproofing of Alexandria's cotton warehouses, followed by a demand for names of people familiar with navigational conditions off Northeast Siberia.[7]

The inability of an individual to keep pace with the accumulation of what Georg Simmel called "cultural elements," and the temporary, fleeting attempts to confine a unity in a single space or picture are, of course, central to the condition of modernity.[8] Though not quite at the scale of the "Library of Babel" fictionalized so brilliantly by Jorge Luis Borges, the attempts to coordinate and classify geographic information, both physical and human, during the Second World War were startlingly audacious.[9] While

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[6] Mortimer Graves, "An Ever-Normal Granary of Area Experts," April 30, 1945, in RG 87, Box 7, Folder 5, SIA, p. 1; see also Martin Lewis and Kären E. Wigen, *The Myth of Continents: A Critique of Metageography* (Berkeley: University of California Press, 1997), pp. 162-163.

[7] See "Information Furnished to War Agencies," in the Card Index File, RG 87, Box 2, SIA. The inquiries came from the OSS Agricultural section and the Army Air Corps, respectively.

[8] Quoted in Mike Featherstone, "Archiving Cultures," *British Journal of Sociology* 51.1 (2000) pp. 161-184; the quote is from p. 162.

[9] See Jorge Luis Borges, "The Library of Babel," in his *Labyrinths: Selected Stories and Other Writings* (New York: New Directions, 1964), pp. 51-58.

undoubtedly affiliated with earlier, imperial systems of comprehensive, hierarchical knowledge, the archival efforts undertaken during World War II were at once more temporary and more complex, insofar as they were linked to an extraordinary assembly of scholars who had gathered in Washington, ready to serve the nation in a time of crisis. Despite the end of the war, the return of many of these academics to their respective universities, and even the closure or segmentation of institutional structures, much of the geographic data compiled during the war, and the systems established for its collection and use, lingered on in various Cold War guises, particularly in the area studies institutes that multiplied after 1945. Thus any history of the regional intelligence produced by Cold War area studies must first consider a number of wartime precedents.

War in Wild Places

> Mandalay, Java, Egypt, Archangel, Hawaii, and countless other names have been stripped of their veils of romance and glamour, and stand revealed as geographical realities possessing vital and strategic importance.
>
> - Walter W. Ristow [10]

Early in 1942, the Secretary of the Smithsonian Institution, Charles Greeley Abbot, appointed a War Committee, in the belief that total war demanded "accurate knowledge of obscure peoples and places and other subjects chiefly of academic interest in normal times." Among the responsibilities of this Committee was the preparation of a series of War Background Studies, which filled the "real need for authentic information" on the marginal but suddenly vital cultures and regions identified by Abbot. Dominated by studies of the Far East and the Pacific Islands, these brief monographs also included more abstract discussions of national evolution and the inevitability of war from an

[10] Walter W. Ristow, "Foreword," in Chester H. Lawrence, *New World Horizons: Geography for the Air Age* (New York: Duell, Sloan and Pearce, 1942), pp. 9-10; the quote is from p. 9.

anthropological perspective. A file of illustrations from Institution publications and other technical journals was also compiled and made available to interested agencies.[11]

According to a post-war retrospective, the twenty-one War Background Studies were the most significant publication service of the Institution: over 600,000 copies were printed. They were used to train soldiers and contributed to the various activities of the Office of Strategic Services (OSS) and military governance operations. According to one Institution employee, the Studies "were supposed to be advisory on how to live with people when they were liberated, or before they were liberated, explaining what the beliefs and the mores of the people were and how to conduct yourself in ways that ingratiated you and your colleagues with their ideas of living, and so on."[12]

However, none of the individual studies had the impact of a single volume produced by the Ethnogeographic Board, the organization hastily established inside the Smithsonian in June 1942 at the behest of the National Research Council (NRC), the American Council of Learned Societies, and the SSRC, and partially funded by the Carnegie Corporation and the Rockefeller Foundation.[13] Titled *Survival on Land and Sea*, and distributed in the hundreds of thousands to the armed forces, the 187-page booklet, condensed enough to accompany a soldier on foreign duty, had a simple purpose: to relate, via the experiences of "men who have actually lived in jungles,

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[11] See C. G. Abbot, "Report of the Secretary," in *Annual Report of the Board of Regents of the Smithsonian Institution...from the Year Ended June 30, 1943* (Washington: U.S. Government Printing Office, 1944), SIA, pp. 1-88; the quotes are from pp. 2, 4. See also C. G. Abbot, "Smithsonian Enterprises," *Science* 96.2497 (November 6, 1942), pp. 417-419; for an example of the War Background Studies, see John R. Swanton, *Are Wars Inevitable?* (Washington: The Smithsonian Institution, May 11, 1943).

[12] *Annual Report of the Board of Regents of the Smithsonian Institution...for the Year Ended June 30, 1945* (Washington: Governmental Printing Office, 1946), SIA, p. 470; "Second Oral History Interview with Frank A. Taylor, Research Associate, Office of Museum Programs, February 6/74," Frank A. Taylor Oral History, SIA, p. 50. The area-specific War Background Studies addressed Alaska, the Aleutian Islands, Burma, China, Egypt and the Suez Canal, French Indochina, Iceland and Greenland, India, the Indies, Japan, Micronesia and Melanesia, New Guinea, the Philippines, Polynesia, Siam, and the Soviet Union.

deserts, and in arctic regions," "the main things that a man should know about living in wild countries."[14] While the gendered language is hardly surprising, the invocation of untamed places – a resuscitation of nineteenth-century British tropes, particularly those of the militaristic Royal Geographic Society – suggests a more intriguing preoccupation with hostile environments, both natural and cultural, that continued deep into the Cold War.

Although a long history of colonial travel and occupation and the geographic *limits* of the Enlightenment provide important precedents for *Survival on Land and Sea*, just one example of a burgeoning military literature on endurance issued during a "world-wide war of movement," it was the strategic value of certain environments that was new. So was the degree of systematic knowledge-mobilization that buttressed such publications, and the simultaneous American presence in a dizzying array of conflict zones. This novelty was captured in a fascinating 1943 *National Geographic* article titled "Fit to Fight Anywhere," which documented not only the mental and physiological predicaments of soldiers warring "from hot tropic swamps to cold Aleutian fogs," but also the various attempts to recreate "strange conditions" in climate and fatigue laboratories (Figure 5).[15]

Survival on Land and Sea begins with the encouraging statement that "thousands of men whose ships have sunk or whose planes have come down in uncivilized areas of the world have made their way back to friendly territory." In this spatial binary,

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[13] Carl A. Guthe, "The Ethnogeographic Board," *The Scientific Monthly* 57.2 (August 1943), pp. 188-191.
[14] *Survival on Land and Sea* (Washington: Publications Branch, Office of Naval Intelligence, United States Navy, 1943), p. 1. The Ethnogeographic Board and other Smithsonian staff, with contributions from the Navy's Bureau of Aeronautics and Bureau of Medicine and Surgery, prepared the booklet.
[15] Frederick Simpitch, "Fit to Fight Anywhere," *National Geographic* 84.2 (August 1943), pp. 233-256; the quotes are from p. 233. See also Aviation Training Division, Office of the Chief of Naval Operations, U.S. Navy, *How to Survive on Land and Sea: Individual Survival* (Annapolis: U.S. Naval Institute, 1943).

"uncivilized areas," even if largely unpopulated, represent the enemy. The opponent, in other words, is nature, in addition to certain cultures whose similar wildness renders them *natural*. As the *Richmond News Leader* put it in a rather effusive editorial on the booklet, the "war will renew for millions of men the age of the pioneers. Those who fight in desert or jungle, in the Arctic and under blistering sun have to learn arts forgotten by the sons of comfort." Offering numerous illustrations to limit the "fear of the unknown," which was "the greatest obstacle that will confront you in the wilderness or at sea," *Survival* advised downed, shipwrecked or stranded soldiers to remain calm, and to "take time to consider your plight and the best ways to go about improving it," regardless of location.[16] This concern with panic, and its opposite, a cool rationality, repeatedly situated within an unfamiliar landscape, returned home during the early Cold War. It was a prominent subject of study among mid-century social scientists, particularly in the growing fields of psychology, sociology, and political behavior.

The advice offered in *Survival on Land and Sea* was detailed and, in many cases, probably quite useful. Yet this assertion does not rule out a critical evaluation of the text. As the product of an Ethnogeographic Board dominated by anthropologists, the manual for servicemen adopted a particular tone in its treatment of potential interactions with "native peoples." While acknowledging the importance of local aid and "dignity," the authors of *Survival* concurrently suggested that Americans "do tricks with string" and "take out some trinket and show interest in it," part of a successful "method of approach [that] has been used many times in many parts of the world by those going to study

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[16] *Survival on Land and Sea*, pp. 1, 2; the *Richmond News Leader* editorial can be found in RG 87, Box 1, Folder 1, SIA.

native peoples."[17] The intriguing component in this caricature of cultural interaction is not the patronizing tone, but rather the insinuation that such techniques were universally applicable from the tropics to the arctic – particularly given the contrasting, lengthy descriptions of regional plants and wildlife preceding the rather brief and belated section on human relations. Environmental differences to classify and overcome, then, were primarily physical. A 'pure' survival was the imperative, and political and psychological questions would either assume significance later, or, in the case of some regions and peoples, were irrelevant.

In May 1943 the Ethnogeographic Board prepared a "partial list of groups and organizations working on survival techniques" that identified 31 agencies, from the Army Air Force's Arctic-Desert-Tropic Information Center to the OSS and Yale's Cross-Cultural Survey, engaged in the effort.[18] Whether intimately or indirectly linked to the military, all shared an interest in demystifying hostile environments, rendering them transparent, malleable, and even governable, using a measured, authoritative tone rich in experience and evidence. As the Chief of the Smithsonian's Bureau of American Ethnology claimed in yet another study of the tropics, "travelers, fiction writers, and others have exaggerated the enchanting and the bad features of the Tropics. By placing particular stress on the latter they strive to enhance their own heroism and fortitude at the expense of the literal truth."[19]

That similar or duplicate reports and rosters were being produced in and for wartime Washington was no surprise. The author of the Ethnogeographic Board's

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[17] *Survival on Land and Sea*, pp. 53, 54.
[18] "A Partial List of Groups and Organizations Working on Survival Techniques (Including the securing, organizing or preparing of manuals)," May 19, 1943, RG 87, Box 1, Folder 4, SIA.
[19] "Tropicana," n.d. [1943], RG 87, Box 1, Folder 9, SIA, p. 1.

official history (itself drafted before the end of the war) described "fabulous confusion" in the capital, particularly at the time of the Board's founding in the first half of 1942. Shortages of all types became chronic, and competition between agencies was acute, leading to contradictory and confusing classification and communication methods. While the non-governmental Smithsonian personnel who staffed the Board were partially removed from this chaos, they still gave precedence to military requests. Moreover, Board employees faced a more general predicament shared by all those whose intellectual agendas had shifted gears from painstaking to urgent: the *translation*, in many cases literal, from the languages and techniques of academic, disciplinary 'research' to the abbreviated, area-based 'action' of policy, or at least the quick provision of information for policy. This dilemma anticipated a second, related sea-change, from disciplinary strictures to interdisciplinary, team-based regional approaches, that was the great impetus for the subsequent development of area studies centres. The Board was thus summed up as a non-governmental agency aiding the government, a "clearing house" whose regional structure and sweeping concern with humans, their "works," and the context of human life necessitated an *unusual* integration of disciplines, from the sciences to the humanities. Equally unusual, moreover, were the questions to which the Board was required to respond – inquiries that were unlikely to be answered through the standard channels of military investigation.[20]

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[20] Carle E. Guthe (Chairman), "The Ethnogeographic Board – June 16 to October 16, 1942 – A Report to the Sponsoring Institutions," RG 87, Box 13, Folder 1, SIA, p. 1; "Ethnogeographic Board: First Meeting [Minutes]," August 3, 1942, RG 87, Box 27, Folder "Board Meeting – Dec. 9, 1944", SIA, p. 1; Wendell C. Bennett, "The Ethnogeographic Board," *Smithsonian Miscellaneous Collections* 107.1 (April 14, 1947), pp. 1-135; the quote is from p. 1. Bennett was an anthropologist from Yale University, and a Member of the Board. See also Guthe, "The Ethnogeographic Board," p. 189; William D. Strong, "The Ethnogeographic Board," *Science* 96.2495 (October 23, 1942), pp. 381-382; the quote is from p. 382; Ellen Condliffe Lagemann, *The Politics of Knowledge: The Carnegie Corporation, Philanthropy, and Public Policy* (Middletown, CN: Wesleyan University Press, 1989), pp. 173-174.

In publications, leaflets, and advertisements placed in professional journals, the Board described its awkward yet intriguing concern, ethnogeography, as "the study of human and natural resources of world areas." But these regions were specifically zones of warfare, in its various manifestations. Applications for financial support stressed those "areas outside the United States where military action, economic, or other action is carried on or planned." The overt use of the term 'area' was both deliberate and novel. Components of the government, particularly the military, were structured along areal lines, while only the humanities-intensive American Council of Learned Societies possessed area committees before 1940. The Board's adoption of a regional approach was matched by other emergency agencies, such as the OSS, the Foreign Economic Administration, and the Office of War Information. There were some disciplines, such as Geography, that were, "by their very nature," concerned with the definition and study of areas, but geographers who definitively grasped non-European regions of conflict were scarce. Indeed, it was anthropologists (influenced by a certain type of geography), and their recollections of travels in "primitive" landscapes suddenly awash with troops, whose relevance was clear, and who dominated the ranks of the Board, including both the first Director and Chairman, William Duncan Strong and Carl E. Guthe. Anthropologists, a 1943 report of a National Research Council Committee noted, were "the only social scientists who study all aspects of a given culture." They also possessed unique experience in "native administration, resettlement and rehabilitation programs" – all indicative of their ability to jump smoothly from "knowledge into action."[21] Isaiah

[21] Strong, "The Ethnogeographic Board," p. 381; Bennett, "The Ethnogeographic Board," pp. 3-4, 8; "Anthropology During the War and After," draft report received by the NRC on March 23, 1943, RG 87, Box 17, Folder "NRC Committee", SIA, pp. 10-11; Lewis and Wigen, *The Myth of Continents*, pp. 163-166. In his review of Board activities, Bennett suggested (p. 18) that the overemphasis on anthropologists

Bowman, one of the few geographers included on the Board (he joined in November 1943), never attended meetings, due to other obligations but also to "lack of interest."[22]

In addition to the provision and distribution of information in response to "spot" inquiries, Board members prepared a select number of larger reports, including confidential documents on "areas of strategic importance," particularly in the Pacific theatre. Featuring charts and photographs, and including sections on topography and ethnography, these surveys were put together at the request of Army and Navy Officials, primarily in the respective intelligence services. Some of these studies, and related articles on "survival for castaways in unfamiliar environments...prepared by experienced scientific travelers," were published in service journals, such as the Information Bulletin of the Army Air Force's Arctic, Desert, and Tropic Information Center. Several similar inquiries, however, were apologetically rejected as too substantial, or initiated and then dropped, or passed onto larger organizations such as the OSS. Projects requiring intensive *research* effort were frequently turned down, whether due to personnel, framework, or policy limitations. The inability to address certain subjects sufficiently was compounded by limited relations with university sources beyond the mere solicitation of contact details. Indeed, in the records of the Ethnogeographic Board, only Yale University, the home of several Board members, is prominent among academic institutions outside Washington.[23]

"may have handicapped the [Board's] full potential." Strong resigned on July 31, 1944, and returned to Columbia University; Arctic specialist Henry B. Collins replaced him.

[22] Bennett, "The Ethnogeographic Board," p. 13. For more on Bowman and World War Two, see Neil Smith, *American Empire: Roosevelt's Geographer and the Prelude to Globalization* (Berkeley: University of California Press, 2003).

[23] Bennett, "The Ethnogeographic Board," pp. 63-65, 86-90, 96; Guthe, "The Ethnogeographic Board," p. 190; W. Duncan Strong, "Director's Report of Progress for the Period January 14 to August 1, 1943, the Ethnogeographic Board," Series III, Subseries A, Box 239, Folder "National Academy of Sciences-National Research Council – Ethnogeographic Board," Carnegie Corporation of New York Archives,

The unusual status of the places monitored by the Ethnogeographic Board prompted the creation of a second list, a "Roster of Personnel, World Travel, and Special Knowledge," divided into regions, and supplemented by catalogues of anthropologists, geographers (only a short list of Europe experts provided by Richard Hartshorne), and "Social Scientists versed in Social Analysis (for) Propaganda Purposes."[24] The central Area Roster was effectively a huge stack of index cards gathered from more specific efforts initiated by groups such as the NRC's Committees on African or Oceanic Anthropology, products of the war that were ultimately folded into the Board. The Roster, eventually dubbed the "World File of Area and Language Specialists," held some 5,000 names. In an age of *Who's Who*, *American Men of Science*, and the National Roster of Scientific and Specialized Personnel, it was hardly novel, except for an emphasis on area and linguistic competence, and a wider cast which incorporated 'amateurs' and foreigners. As the *Washington Post* explained in a colourful 1942 article, anyone "expert on such far-ranging subjects as Timbuktu or the sleeping habits of Eskimos is fair game for the men in the first floor of the Smithsonian Institution's West Building." The varied list of seemingly suitable sources for the Roster included the American Malacologists Union, the Baptist Foreign Mission, the College Art Association, and the Foreign Press Club. Thousands of generic questionnaires were also mailed to individuals, requesting such detail as length of residence, linguistic facility, and number of photographs, films, maps, and miscellany possessed. The Board formally

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Columbia University Rare Book and Manuscript Library (hereafter CCNY). January 14, 1943 was a significant date, since it was the day the Carnegie Corporation granted the Ethnogeographic Board $20,000.

[24] These lists are all in RG 87, Box 4, SIA.

appropriated some of these objects – including Baedeker's Guides to Germany and Austria, which were then distributed to the armed services.[25]

To better answer the questions that flooded in from all directions, the Ethnogeographic Board also maintained reference and survival libraries. A copy of Yale's Cross-Cultural Survey (CCS) was a central component of these resources. The CCS, established in 1937 under the leadership of the anthropologist George Murdock, was another system designed to assemble and organize behavioral literature on "primitive peoples." The ideas motivating the creation of the CCS lay at the confluence of two powerful modern impulses sketched above: the urge to *classify*, according to ever more complex systems of reference and organization, and the quest for *integrated*, total knowledge. In this case, it was the initiative of a group of psychologists, physiologists, sociologists and anthropologists at Yale's Institute of Human Relations. One internal history describes "the common ground on which the development stood [as] the basic assumption that all behavior, including that of people, occurs according to natural laws which ultimately are quantitatively determinable and stable by means on true equations."[26] Yet these familiar tropes were limited, and spatialized, by a third characteristic of modernity: the identification of *unique groups* of individuals sharing

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[25] "Here's a Spot if You Know Strange Lands," *Washington Post*, October 4, 1942. A copy of this article (with no page numbers) can be found in RG 87, Box 13, Folder 2, SIA. See also the form letter written by Henry B. Collins, dated June 13, 1945, in Box 154, Folder "Ethnogeographic Board – Responses to Requests," Henry Bascom Collins Papers, National Anthropological Archives, Suitland, MD (hereafter NAA). For the list of groups consulted by the Board, a discussion of the Area Roster's intricacies, and sample questionnaires, see Bennett, "The Ethnogeographic Board," pp. 27-38, 116-124. The National Roster of Scientific and Specialized Personnel, sponsored by the War Manpower Commission, was used

[26] Clellan S. Ford, *Human Relations Area Files: 1949-1969 – A Twenty-Year Report* (New Haven: Human Relations Area Files, Inc., 1970), p. 5; George P. Murdock, "The Cross-Cultural Survey," *American Sociological Review* 5.3 (1940), pp. 361-70. Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and its Consequences* (Cambridge: The MIT Press, 1999) has influenced my thoughts on classification.

certain traits. Once a sufficient sample of these distinct units was assembled, generalizations became possible.

During the Second World War, however, after consultation with the Navy the Survey was revised to concentrate on Japanese possessions in the Pacific, and in 1943 the Navy took over the project entirely, although Murdock, who had become a Navy lieutenant commander, was still in a supervisory position. By that year, the CCS held some 500,000 cards on more than 150 groups "representing every part of the world," data that was used in a series of seven "Strategic Bulletins of Oceania" produced by the Ethnogeographic Board, documenting meteorological conditions, food and water supplies, and the vectors of disease – all information useful to an occupying force. In 1942, Nelson Rockefeller's Office of Inter-American Affairs contracted with Yale to produce a Strategic Index of Latin America, which divided the cultures and sub-cultures of the area into roughly one hundred regional units. When it was discontinued just over a year later, the Index staff was estimated to have accumulated one-third of the existing "major sources on the geography and civilization of Latin America."[27]

The final and perhaps most lasting contribution of the Ethnogeographic Board to a regional geography of the globe was an analytical survey of foreign area courses offered during the war at many American universities. At a March 1944 conference on area studies organized by the Rockefeller Foundation, representatives of the Board were invited to submit a supplement to this survey that considered the future of area studies.

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[27] *Function and Scope of the Human Relations Area Files, Inc.* (New Haven: Human Relations Area Files, 1953), p. 4; Bennett, "The Ethnogeographic Board," pp. 40-41; George P. Murdock et al., *Outline of Cultural Materials*, Third Revised Ed. (New Haven: Human Relations Area Files, 1950), p xiii; Ira Bashkow, "The Dynamics of Rapport in a Colonial Situation: David Schneider's Fieldwork on the Islands of Yap," in George W. Stocking Jr., ed., *Colonial Situations: Essays on the Contextualization of Ethnographic Knowledge* (Madison: University of Wisconsin Press), pp. 170-242. The Strategic Index of Latin America was subsequently renamed the Strategic Index of the Americas.

Both survey and report were largely the responsibility of William Fenton, a Board Research Associate and anthropologist associated, during and after the war, with the American Bureau of Ethnology. The Board's interest in the area courses was reciprocated; as William Duncan Strong noted in 1943, "universities setting up courses of regional study have written the Board or sent representatives to secure data on available personnel and certain types of information for teaching such courses."[28]

It was not the service aspect of Fenton's survey that resonated into the post-war period. Indeed, Fenton's outline of what an ideal university program might resemble arrived too late, and did little to alleviate the chaos on campuses whose resources were thinned by departed students and faculty and stretched by hordes of trainees. As many of the names on the Board's Area Roster dispersed into the frantic Cold War market for regional experts, and as elements of *Survival on Land and Sea* were developed into more specific survival manuals and guides for the hostile environments of the Cold War, the report on Area Studies served as a template for increasingly frequent discussions on the subject. Nothing quite like the Ethnogeographic Board emerged during the Cold War, but dozens of new sites with similar characteristics, supported through the same channels of government and foundation funding, did emerge to address another, more prolonged, crisis.

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[28] Bennett, "The Ethnogeographic Board," pp. 77-78; "Director's Report of Progress," CCNY. On Fenton, see the biography accompanying his papers housed at the American Philosophical Society, available at http://www.amphilsoc.org/library/mole/f/fenton.htm (accessed May 17/03). Several of Fenton's initial reports are available in RG 1.1, Series 200(S), Box 331, Folder 3944, Rockefeller Foundation Papers, Rockefeller Archive Center, Tarrytown, New York (hereafter RF). Fenton later published his findings, first as an article in the *Bulletin* of the American Association of University Professors, and then as a full report, *Area Studies in American Universities* (1947), under the auspices of the American Council on Education. The anthropologist Elizabeth Bacon also worked on the survey of university area courses, but she did not receive authorial credit for any of the publications.

Although the rushed timetable of the Board's work and the *type* of knowledge it produced bore little resemblance to the scholarship originating in places like Harvard's Russian Research Center, the same networks of power and the same regional emphases lingered. As the Board's resident historian noted near the end of the Second World War (shortly before the Board's termination), aside from valuable contributions to military campaigns, a "unique experiment in the integration of academic research" had been completed.[29] As early as July 1944, in a statement composed on the occasion of William Duncan Strong's resignation as Director, Board Chairman Carl Guthe recognized the growing need for "a more informed appreciation on the part of experts of the interrelations among a large number of the special fields of investigation which relate to human activities." Guthe was looking ahead; the interdisciplinary problems that concerned him were those of the *post-war* world, as they became "more defined."[30]

In one of the few historical discussions of the Ethnogeographic Board, Martin Lewis and Kären Wigen note that the Board's global map actually shifted during the war, as military clients recognized the inadequacy of the "old continental architecture, anchored by the vast category of Asia," and the growing irrelevance of European colonial empires. The system which replaced these, that of "world regions," was still rudimentary, and in transition, during the Second World War, but the modifications made later remained consistent with the focus on political units and cultural *civilizations*. The geographical consequences of such cartography were "never given extended consideration" by Board members, and Lewis and Wigen argue that the absence of geographers on the Board was the reason. Primarily concerned with "physical and

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[29] Bennett, "The Ethnogeographic Board," p. 110.

economic characteristics of subnational regions," and rarely venturing intellectually beyond Europe, Geography's practitioners were uninterested in the sizable areas studied and occupied by the military and its informational branches, and lacked the linguistic training to cope with the new regions of relevance. This scholarly lag had a devastating result. As geographers continued to occupy a surprisingly minor role in post-war area studies, Geography grew increasingly marginal in the American academy.[31]

This is a simplistic summary of a much more complex disciplinary history. But the regional concept that owed much to the Ethnogeographic Board and its anthropologist cadre was ultimately a subject that generated little debate – precisely because it was an instrumental "means to an end," a structure that could be used to organize policy and education, a slightly finer scale that could be easily made to fit within the three worlds scheme. An older, continental category such as 'Africa' could thus linger on without dispute, precisely because of where it was placed on the geopolitical hierarchy.[32] However, the importance of the Board should not be exaggerated. Other organizations were also grappling with and advocating an area approach, and an investigation of these suggests that the jumbled taxonomy of world areas was far less important than the *intelligence* it generated.

School for Soldiers

In 1944, when William Fenton returned from his visits to 27 campuses hosting the Army Specialized Training Program (ASTP) and Civil Affairs Training Program (CATP), he produced a series of reports from within the Ethnogeographic Board that

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[30] Carl E. Guthe, "The Future of the Ethnogeographic Board," September 8, 1944, in Box 153, Folder "Ethnogeographic Board – John E. Graf's File, 1944-1946," Collins Papers, NAA, p. 2.
[31] Lewis and Wigen, *The Myth of Continents*, pp. 163-166.

were distributed within Washington near the end of the war. Although conflict was a memory when his summary of these specialized pieces was released to a wider audience in 1947, Fenton's indictment of the disorganized state of area resources in the United States remained relevant. While the Board had become a home for academics – particularly anthropologists – with experience in foreign areas, these scholars were overwhelmingly confined to Washington. The ASTP's Foreign Area and Language Curriculum, in place at 55 of the 227 sponsoring universities, was designed to improve the linguistic abilities and areal awareness of those enlisted soldiers who would potentially visit certain regions.[33] The focus was global; dozens of languages were taught. Those who participated in the ASTP had not only volunteered, but were also judged to be of suitable intellectual ability – "of a type that we are likely to see back on campuses once the war is over." At its peak in December 1943, over 13,000 personnel were enrolled in the Area and Language Curriculum. The CATP, on the other hand, was located at just ten universities, and was designed specifically for new officers whose expertise would assist in martial governance.[34]

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[32] *Ibid.*, pp. 166-167.

[33] Languages and Foreign Area Study were just two (linked) components of the ASTP, which also offered courses in Aeronautical Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering (Communication and Power), Mechanical Engineering, Sanitary Engineering, Marine Transportation, Medicine, Dentistry, Veterinary Medicine, Personnel Psychology, Surveying, Internal Combustion Engines Specialization, Basic Communications, Acoustics and Optics, and Military and Physical Training. See US Army Service Forces, Army Specialized Training Division, *Essential Facts about the Army Specialized Training Program* (Washington: U.S. Government Printing Office, 1943), p. 5.

[34] William N. Fenton, *Area Studies in American Universities* (Washington: American Council on Education, 1947), Preface; Wayland J. Hayes and Werner J. Cahnman, "Foreign Area Study (ASTP) as an Educational Experiment in the Social Sciences," *Social Forces* 23.2 (1944), pp. 160-164; the quote is from p. 160; Robert J. Matthew, *Language and Area Studies in the Armed Services: Their Future Significance* (Washington: American Council on Education, 1947), p. 4. See also Bennett, "The Ethnogeographic Board," p. 107. For a published example of Fenton's initial reports, see his "Integration of Geography and Anthropology in Army Area Study Curricula," *American Association of University Professors Bulletin* 32.4 (1946), pp. 696-706.

The intention of the coordinators at the Military Government Division of the Army's Office of the Provost Marshal General was that those trained under the Foreign Area and Language component of the ASTP would serve as part of small police forces under the command of officers who had also received special instruction – at the CATP. Planning of the language instruction (which accounted for three-fifths of the course time) was passed to the American Council of Learned Societies and its secretary, Mortimer Graves, who was also a prominent force behind the Ethnogeographic Board. Basing the program on intensive language courses already underway at several universities, Graves and his assistants advocated a concentration on colloquial fundamentals and endless, repetitive drills. Once additional components of the curriculum were added, solicitations were made to universities. The resulting "stampede" of interest was not just a product of patriotism, or a desire to make use of those faculty not already employed in war work; it also reflected the awareness on the part of academic leaders that the study of place and culture under one roof might have long-term, beneficial repercussions for American intellectual life. Some university presidents had a dissenting opinion. Cornell's Edmund E. Day argued that small colleges would be swamped for the duration of the war by soldiers who had little need of a liberal arts education – which was not how the Army and navy "make killers" – but would instead demand extensive "technical and professional training."[35] This was, as it turned out, an incorrect view on several counts, but it was devastatingly accurate on another. Both military education and later instruction in area studies centres were designed to create social technicians, or *engineers*, who were

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[35] Charles S. Hyneman, "The Wartime Area and Language Courses," *American Association of University Professors Bulletin* 31.3 (1945), pp. 434-447; Matthew, *Language and Area Studies*, p. 53. Day is quoted in Louis E. Keefer, *Scholars in Foxholes: The Story of the Army Specialized Training Program in World*

distinguished from the more detached social scientists that had reared them. But across the landscape of Second World War pedagogy and research this distinction was immediately blurred, a trend that continued unabated with declarations of 'peace'.

Because many social scientists were already in Washington, younger and older academics were employed as ASTP instructors. And unlike the Ethnogeographic Board, the Army initiatives were primarily concerned with Europe and Asia, although for comparative purposes allusions to "parallel developments in the United States" were made frequently. This was an indication of the integral but shadowed presence of *America* in a globe of regions. Just as enemies and their ideologies appeared everywhere during and after the War, the study of foreign places and cultures encouraged a parallel appreciation for domestic values, to be sure, but this was a sentiment of *difference*. In this respect, it made sense that the dual foundations of the ASTP course of study on areas were geography and anthropology, bolstered by a splash of history – or the survey of a region's physical features, followed by a "standard ethnography" emphasizing cultural characteristics. The mention of ethnography was deliberate. The ASTP "was an experiment which attempted rather uniquely to prepare soldiers for field work of sorts in the civilizations (or cultures) of great areas."[36]

That this would be an uncommonly violent form of fieldwork did not merit mention. But Fenton, for one, was aware of the threat that this integrated program would

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War II (Jefferson, NC: McFarland and Co., 1988), p. 38. For another ASTP memoir (and an unrevealing one), see Francis N. Iglehart, *The Short Life of the ASTP* (Baltimore: American Literary Press, 1997)

[36] Hayes and Cahnman, "Foreign Area Study," p. 163; Hyneman, "The Wartime Area and Language Courses," pp. 444-445; Fenton, "Integration," p. 697. For checklists of the topics covered in the geography, history, and 'institutions' and 'cultures' curriculum categories, see Matthew, *Language and Area Studies*, pp. 79-81. The presence of Carl Sauer is apparent here, but he was not, as far as I can tell, proximate to the work of the Ethnogeographic Board. Sauer was, however, an early member of the Social Science Research Council's Committee on World Regions. But this was undoubtedly for his expertise on

pose once it gained a foothold in American universities. Grasping the "total civilization of a region" required blending anthropology's cultural focus with geography's central concept of the region, producing an approach to "social phenomena" which could prove innovative and productive in the future. While this was not an awkward juxtaposition, it did necessitate interdisciplinary communication. And while the two elements of this synthesis were, in the terms of anthropology and geography, not always sufficient for Cold War social science, they were still certainly essential to the growth of area studies programs after World War II. Also prominent, however, was a third component that received far less scrutiny: instruction in law enforcement, or the 'field' aspect of the curriculum, that underwent an intriguing metamorphosis during the early Cold War. Once the Army expanded enrollment from 2,000 to 15,000 in order to placate its various branches, policing was dropped from the curriculum for most, but not all, of the personnel. Yet the military pretense of the course remained: to minimize the difficulties of social and spatial adjustment by preparing "the individual to act efficiently in a new environment."[37]

In searching for suitable geographers the Army encountered the same problem faced by the Ethnogeographic Board: a dearth of teachers who were "attached to man and his culture," and a corresponding preponderance of technical specialists, often attached to combined departments of Geology and Geography, who were frequently preoccupied with the instruction of Air Corps cadets in meteorology and map reading. As a result, scholars from disciplines such as classics and economics were occasionally enlisted to

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Latin America; his historical sensibilities, on the other hand, did not mesh well with geopolitical scholarship.

lecture on the 'place' aspect of the curriculum. Given the limited educational experience of the trainees, the emphasis shifted from explanatory to descriptive geography. 'Scientific' aspects were kept to a minimum. And geographers whose understanding of regional work was the intensive scrutiny of a diminutive territory were suddenly forced to broaden their horizons. Yet this same background meant that the generic *approach* of geographers did not struggle to keep up with the intellectual pace, as it would in the focused, authoritative circles of area studies, but instead suited the ASTP's purposeful aims quite nicely. As two sociologists who participated in the ASTP at Vanderbilt University wrote, the Army "does not want its soldiers to be acquainted with the problems of population, stratification, labor, and the family as such but with all of these as part and parcel of an entire civilization."[38] But the limits of this schema were already apparent. Fenton reported that the skeptical opinion of Geography's status held by other social scientists was reinforced when others from a range of alternate disciplines stepped in and "did a fair job of teaching geography" when necessary. In supplying educated personnel to the ranks of the Army, those universities lacking geography departments did not suffer from the absence.[39]

In addition to its Foreign Area and Language courses, the Army Specialized Training Program also provided instruction in several other fields, including engineering and medicine. It was believed, not surprisingly, that as many soldiers as possible should possess an understanding of military equipment and its mechanisms, but because this

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[37] Fenton, *Area Studies*, pp. 81-82; Hayes and Cahnman, "Foreign Area Study," p. 160; Hyneman, "The Wartime Area and Language Courses," p. 439; Svend Riemer, "Individual and National Psychology: A Problem in the Army Area Study," *Social Forces* 22.3 (1944), pp. 256-261; the quote is from p. 256.
[38] Hayes and Cahnman, "Foreign Area Study," p. 161; see also Riemer, "Individual and National Psychology."
[39] Fenton, "Integration," pp. 698-702.

equipment "embodie[d] abstract principles of science," these principles needed to be taught as well.[40] For those who participated in the geography component of the ASTP, a key piece of 'equipment' was the map, and key principles included those of basic cartography. Soldiers were provided with an atlas of world maps, many prepared exclusively for the Basic portion of the two-part program, a three-term "phase" which totaled roughly nine months. Holders of the atlas were urged to use it in conjunction with a globe, "in order to keep in mind continually the true picture of the global relation of the land and water areas of the world – and especially of the world that matters." Credit for many of the maps – none of which were at any scale smaller than the globe – was given to the Department of State and its Geographer, Samuel W. Boggs, and the Map Division of Office of Strategic Services, led by Arthur H. Robinson.[41]

Boggs and Robinson were not the only prominent geographers with a hand in the ASTP curriculum. Alongside the atlas, students worked through a substantial textbook titled *Geographical Foundations of National Power*. Planned by Isaiah Bowman, Richard Hartshorne, Derwent Whittlesey, and Charles Colby, and written by Whittlesey, John Kirkland Wright, Dorothy Good (of the American Geographical Society), Harold Sprout, and Colby, the tome was effectively the combined product of the best, or at least the highest-profile, geographers in the United States at the time. While broad in scope,

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[40] *The Army Specialized Training Program to June 1944: ARMY Specialized Training Bulletin No. 8* (Washington: Headquarters, Army Service Forces, June 1944), p. 1.

[41] Army Service Forces Manual M-101, *Atlas of World Maps, Army Specialized Training Program* (Washington: Headquarters, Army Service Forces, November 1943), p. 1. The Basic Phase of the ASTP followed Basic Military Training completed by high school graduates. In April 1944, the Army having "reached its authorized strength," the ASTP's Basic Phase was terminated and replaced by a program for reserves, not "enlisted men on active duty." See *The Army Specialized Training Program to June 1944*, pp. 1, 4-5. On Robinson and the Map Division, see Chauncy D. Harris, "Geographers in the U.S. Government in Washington, DC, during World War II," *The Professional Geographer* 49.2 (1997), pp. 245-256; Arthur H. Robinson, "Geography and Cartography Then and Now," *Annals of the Association of American Geographers* 69.1 (1979), pp. 97-102.

Geographical Foundations of National Power sought to establish a connection between a soldier's "duty and the kind of world in which he will live after the war." It was, in other words, a contribution to military geography and geopolitics, a statement of disciplinary principles which could not escape its context. This setting was a conflict which represented the "most destructive form" of the "competitive struggle for existence," a struggle whose "basis and...nature" was the subject of geographical study. Competition, for the authors of the volume, applied at all scales. Individual struggles promised recruits were thus telescoped to an international arena, where the role and potential of a state was determined by considerations of *power*.[42] This latter emphasis, derived from realist scholarship in international politics, is hardly surprising, given the dependence of period political geography on this literature. Of greater interest are the connections drawn between bodies and states, suggesting that they shared an antagonistic and oppositional relationship with one or more enemies, and that this association was not just a temporary one, but rooted in the principles of geographical science.

Anthropology's relevance to the ASTP was signaled by the discipline's unusual, lingering treatment of the "whole man," and the ease with which it could shift to accommodate the rudimentary "universal cultural patterns" favoured by curriculum planners. Even more crucial, however, was the experience anthropologists possessed in 'contact situations' and field methods. As Fenton put it, anthropologists held "an informant's view of culture," a particularly relevant approach for those soldiers who

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[42] Army Service Forces Manual M103-1, *Geographical Foundations of National Power, Section One* (Washington: U.S. Government Printing Office, 1944), pp. vii, viii. Just one year later, Harold and Margaret Sprout released *Foundations of National Power: Readings on World Politics and American Security* (Princeton: Princeton University Press, 1945), an edited collection intended to extend the same concern with power, geopolitics, statecraft and military geography into the post-war period. A second, fully revised edition was published in 1951.

would be engaging in "social control at the local level," rather than the broader scales of military government. These were practical matters of civilizational understanding and occupation, and were certainly not as complex as contemporary anthropological theory. In this rushed program, the "total picture of an area" sought was profoundly elementary.[43] But it is the exhibitory aspect – the stubborn quest for *some form* of complete and bounded perspective – and the military orientation of this view that are of import.

The discrepancy between pre-war instruction and the exigencies of the ASTP was emphasized by scholars engaging in this temporary employment, and marked the difference between the ASTP and more 'advanced', graduate-oriented area programs of the Cold War. However, as a form of relatively popular knowledge, the customs and techniques outlined by the Army's chosen instructors should not be dismissed. Like the interactive suggestions of *Survival on Land and Sea*, the assumptions within this 'anthropology' were closer to those of its more sophisticated descendent than many of its immediate raconteurs cared to acknowledge. Given the treatment of the 'third world' by modernization theory, sophisticated may not be the correct term. And despite the basic level of instruction, the ASTP revealed that the challenge of a "more inclusive reality" – a global worldview, divided into more manageable regions – could "only be met by an integrating effort of all the social sciences." The combination, pitched perfectly for policy, of social science, global ambition (realized in language training), and, crucially,

[43] Fenton, "Integration," pp. 703-705; Matthew, *Language and Area Studies*, p. xii. If anthropologists could not be used as "informants", refugees, returned missionaries, or businesspeople were substituted; see Hyneman, "The Wartime Area and Language Courses," p. 443.

policing and governance was not available at universities before the Second World War; it would have to be invented.[44]

Character, Culture, and Nation

The ASTP, as several contributors recounted, was an *experiment* in education, comparable to the emergence of mental testing in World War I and the subsequent growth of psychology at universities. Indeed, social science during the Second World War was led by similar, if more advanced and ambitious, research in social psychology. An Army pamphlet on the ASTP claimed that the most powerful weapon of the soldier was "his brain," and as these same servicemen progressed through training courses on campuses across the country, they and others were being surveyed and monitored by teams of experts.[45]

While experimentalists preoccupied with problems of sensation and perception were participating in "man-machine" engineering research, and another set of social scientists sought to comprehend the "national character" of German and Japanese foes as part of a strategic background, a third group combined extensive, positivist survey methods and an interest in personality, both individual and national, to analyze American combatants. All three of these efforts advanced psychological techniques and definitively interdisciplinary approaches that in certain cases included the natural sciences, while concurrently articulating the relevance of social scientific authority within a democratic society, particularly one engaged in prolonged, global geopolitical conflict. If nations possessed characters, cultures could then be diagnosed and classified

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[44] Hayes and Cahnman, "Foreign Area Study," p. 162; Hyneman, "The Wartime Area and Language Courses," pp. 438-439.

as disordered, and psychology could lead to policy. This was, obviously, a narrow and even anti-cultural perspective on culture. Militarism allowed psychology to "operate as a weapon system" of the imagination, against "epidemics of irrational emotion and flawed national characters in need of containment or reconstruction."[46]

Studies of national character are commonly associated with Margaret Mead and Ruth Benedict, both students of Franz Boas, a towering figure in twentieth-century American Anthropology, and no stranger to geographical thought either. Even before the Second World War, Mead and Benedict's work had focused on the relationship between psychological factors and cultural conditions, but with the commencement of combat, they, along with Mead's husband Gregory Bateson and Geoffrey Gorer of Yale, shifted from the study of small, 'primitive' societies to the psycho-cultural condition of 'modern', *national* units such as Germany, Japan, and the United States itself. In turning their attention to the home front, and to the emancipatory aspects of social science, the cultural anthropological traditions of traveling abroad to understand social patterns and avoiding explicit questions of foreign policy and social change were cast aside.

But given the Boasian critique of scientific racism that defined early twentieth-century anthropology, it was hardly surprising that many American anthropologists, beginning with Boas (who died in 1942), would take issue with Nazism. Several formed a Committee for National Morale (which included Mead, Bateson, Gorer, Benedict, Clyde Kluckhohn, and George P. Murdock) to promote the utility of interdisciplinary behavioural science even before Pearl Harbor. They and others then joined the rush of

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[45] See Army Service Forces, Army Specialized Training Division, *Fifty Questions and Answers on Army Specialized Training Program* (Washington: U.S. Government Printing Office, 1943), p. 3.
[46] Ellen Herman, *The Romance of American Psychology: Political Culture in the Age of Experts* (Berkeley: University of California Press, 1995), p. 305.

social scientists to war-related posts. Benedict, for instance, replaced Gorer as head analyst in the Office of War Information's (OWI) Overseas Intelligence Bureau in June 1943. This division sent prepared propaganda for enemy nations and distributed more innocuous "information" to allies and neutral states. A year later, having prepared a series of cultural profiles on various war-torn countries, she was asked by Alexander Leighton – a psychologist who, along with Clyde Kluckhohn, headed the OWI's Foreign Morale Analysis Division – to write a study of Japan. Despite her inability to read Japanese or conduct fieldwork, Benedict wrote the report, which was revised and expanded after the war, and published as the best-selling *The Chrysanthemum and the Sword: Patterns of Japanese Culture* (1946). Margaret Mead's work with the National Research Council's Committee on Food Habits, meanwhile, led her to ruminate more generally on American character and, later, to expand her thoughts into a comparative project on various types of national ethos. Her consideration of democracy and culture in the United States led to a "major piece of public anthropological advocacy," *And Keep Your Power Dry* (1942).[47]

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[47] Ruth Benedict, *The Chrysanthemum and the Sword: Patterns of Japanese Culture* (New York: Houghton Mifflin, 1946); Margaret Mead, *And Keep Your Powder Dry: An Anthropologist Looks at America* (New York: Morrow, 1943). Good secondary sources include Herman, *The Romance of American Psychology*, Chapter Two; David Price, "Lessons from Second World War Anthropology: Peripheral, Persuasive and Ignored Contributions," *Anthropology Today* 18.3 (2002), pp. 14-20; Virginia Yans-McLaughlin, "Science, Democracy, and Ethics: Mobilizing Culture and Personality for World War II," in George W. Stocking Jr., ed., *Malinowski, Rivers, Benedict and Others: Essays on Culture and Personality* (Madison: The University of Wisconsin Press, 1986), pp. 184-217; Carleton Mabee, "Margaret Mead and Behavioral Scientists in World War II: Problems in Responsibility, Truth, and Effectiveness," *Journal of the History of the Behavioral Sciences* 23.1 (1987), pp. 3-13; Christopher Shannon, "A World Made Safe for Differences: Ruth Benedict's *The Chrysanthemum and the Sword*," *American Quarterly* 47.4 (1995), pp. 659-680. The participation of anthropologists in the Second World War, and indeed that of all intellectuals, went almost unquestioned, regardless of political persuasion. In addition to the struggle against Nazism, many progressive American academics suggested that their war contributions could potentially temper the reductionism of political and military interests within their own government. Ironically, similar service to the Cold War state became profoundly controversial.

For Mead and other liberal intellectuals, the American democracy pressingly in need of defence during the Second World War represented an abstract and even scientific principle. It was also a *normative* form of culture, set contrapuntally against Nazi, and later Soviet, totalitarianism, but also against all cultures not defined by "freedom-as-autonomy." That the state of American character or morale occasionally seemed on shaky ground only increased the importance of neutral and detached social scientific contributions to the war effort. This absolute defence of democracy challenged the relativism encouraged by Boasian anthropology, which was subsumed in the pragmatic decision to embrace patriotism, whether cautiously or not. It also challenged Boas himself, since the American Anthropological Association had censured him for criticizing anthropological activity (notably espionage) in World War I, and for his pacifist leanings generally. Benedict, by contrast, was aware of the OWI's role in formulating psychological warfare doctrine, but she also perceived this to be a natural entry point into the compilation of information on national character, which in turn would be critical to post-war peace. A peace to be achieved, it was hoped, through a United Nations where the uniqueness and independence of cultures could be fully respected.[48]

The study of cultures "at a distance" spearheaded by Mead, Benedict and others in the early stages of the Second World War eventually spread from a focus on the Axis powers to cover occupied nations such as Greece, Thailand, and China, and, later still, the Soviet Union. Given the hasty assemblage of many studies, the obvious constraints

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[48] Yans-McLaughlin, "Science, Democracy and Ethics," p. 207; Judith S. Modell, *Ruth Benedict: Patterns of a Life* (Philadelphia: University of Pennsylvania Press, 1983), pp. 268, 276; Shannon, "A World Made Safe for Differences," p. 662. On Boas and World War I, see Price, "Lessons from Second World War Anthropology," p. 14. On psychological warfare in World War II, see William E. Daugherty, "US Psychological Warfare Organizations in World War II," in William E. Daugherty and Morris Janowitz, eds., *A Psychological Warfare Casebook* (Baltimore: The Johns Hopkins University Press, 1958), pp. 126-135.

placed on travel to Axis countries, and the dependence on existing secondary sources and interviews,[49] the work that fell under the banner of national character was recognized as "only approximately accurate," although it certainly retained academic pretensions. Critics, including one associated with the OWI, immediately pounced upon what was perceived to be the lost objectivity, caricatured phrasing and moralistic ethnocentrism of some national character scholarship, a "curious doctrine for the heirs of Franz Boas." But proponents of this approach successfully infiltrated various wartime agencies, from the OWI to the OSS, where Bateson found a home along with dozens of other anthropologists. National psychology was a common subject of discussion in the Army Specialized Training Program.[50]

The support of the War Department (which became the Department of Defense in 1947) and the general context of the war meant that studies of 'other' cultures, positioned next to ongoing consideration of America's unique attributes, were fundamentally contributing to the advocacy of a regionalized world *with the United States at its centre.* Crucially, the cultural foundations heralded in culture and personality research were consistently those of 'America', and not 'the West'. This made sense given Europe's

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[49] Not surprisingly, some of the interviews were conducted with residents of United States internment camps, an important subject that cannot be addressed here. For more on anthropology and the War Relocation Authority, and the relationship between Authority practices and culture and personality studies, see Orin Starn, "Engineering Internment: Anthropologists and the War Relocation Authority," *American Ethnologist* 13.4 (1986), pp. 700-720; Mabee, "Margaret Mead," pp. 6-7.

[50] Mabee, "Margaret Mead," p. 10; Price, "Lessons From Second World War Anthropology," p. 18; Yans-McLaughlin, "Science, Democracy, and Ethics," p. 196. For two immediate critiques of this "applied anthropology," see Riemer, "Individual and National Psychology," and John F. Embree, "Applied Anthropology and its Relation to Anthropology," *American Anthropologist* 47.4 (1945), pp. 635-637; the quote is from p. 636. A more thorough challenge can be found in Alfred R. Lindesmith and Anselm L. Strauss, "A Critique of Culture-Personality Writings," *American Sociological Review* 15.5 (1950), pp. 587-600. John Embree's harsh criticism of national character methods is partially contradicted by his 1943 booklet *The Japanese*, published as Number 7 in the Smithsonian's War Background Studies series, where he traces Japanese insecurity and rage to practices of child-rearing. Embree repeated his criticisms later: see "A Note on Ethnocentrism in Anthropology," *American Anthropologist* 52.3 (1950), pp. 430-432; and

wartime horrors, and the role that America was beginning to play as the locus of a new modernity, but also for practical reasons of geopolitics made manifest by militarism. Far from a presenting the placid version of relativism that was much maligned at the time, the psycho-anthropological work conducted during the war advocated a global geography that was certainly divided by culture and politics, but this division was discordant and hierarchical. It emphasized differences and the inherent flaws within other regions – and not just those occupied by American enemies. Idealism was eventually set aside for an optimistic, forward-looking version of realism, and if this was contradictory, it did not matter to the sponsors of the latter brand of work. Mead and others were beginning to walk the theoretical and practical tightrope that defined post-war area studies: an opposition to authoritarian forms of rule and persuasion, next to a desire or need to nudge populations towards democratic values, even if undemocratic techniques were required.

In the OWI's Far East section, under the direction of the historian of China, George Taylor, a group of talented anthropologists attempted the dual task of devising methods for Japanese surrender and convincing American military leaders of the complexity of Japanese culture, a nuance that would, contrary to the opinions of certain decision-makers, permit this same surrender. The conclusion that Japanese morale – of both soldiers and civilians – was faltering was certainly unorthodox, and contradicted subsequent arguments in favour of the atomic bomb's use. Whether Taylor and his staff were able to moderate opinion of Japanese character – particularly concerning the role of the emperor in discussions of surrender – is a matter of significant dispute. For Clyde Kluckhohn, the appraisal of the emperor's symbolic value was the most important

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John W. Dower, *War Without Mercy: Race and Power in the Pacific War* (New York: Pantheon, 1986), p. 128.

contribution of the OWI's anthropologists. He deemed it far more valid, and far more practical, than vulgar psychoanalytic gestures to the relevance of lingering childhood traumas. Yet the latter may have ultimately had more resonance, if only because they reinforced popular prejudices within policy circles and beyond, and did not do much to challenge or moderate them.[51]

American behavioral scientists working in intelligence analysis and psychological warfare had, by the final year of the war, collectively determined that Japanese culture was submissive but malleable, childishly uncertain and ethically situational. As such, it was capable of oscillating between "fanatical militarism and some form of qualified democracy." By maintaining the emperor in place, only shifting his role from the "embodiment of ultranationalism" to a democratic symbol, and by combining "authority, example, and symbolic manipulation," a modest form of democracy could be achieved. While this view was more accommodating than that of conservative Asia hands who repeatedly stifled discussion of policy options by stressing the incompatibility of self-government with obedient and tradition-bound Japanese masses, the psychological perspective remained condescending and cautious.[52] It was also directly tied to military strategy, as mental and moral weaknesses were revealed for the benefit of propaganda operations, diplomatic negotiations and, of course, strategic choices such as the use of atomic bombs.

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[51] Price, "Lessons from Second World War Anthropology," p. 19; Mabee, "Margaret Mead," pp. 8-9; Dower, *War Without Mercy*, pp. 138-139. Kluckhohn – who was neither a Japanese nor a Russian expert – did not abandon his decisively applied and conservative tone after the war, when he headed Harvard's formidable Russian Research Center, discussed in the next chapter.

[52] John W. Dower, *Embracing Defeat: Japan in the Wake of World War II* (New York: Norton, 2000), pp. 217-220; and *War Without Mercy*, especially pp. 118-146. At a December 1944 conference on "Japanese Character Structure" in New York, attended by over forty prominent social scientists, Talcott Parsons and Margaret Mead both described Japanese conformity as analogous to adolescent behavior in the United States. See *Ibid.*, pp. 131-132.

Yet in stressing the possibility of Japanese democracy, the behavioral science approach, enfolding even the more humanistic scholars like Benedict, also suggested that Japan's national culture was, like all national cultures, unique *and* adaptable, full of potential for either improvement or degeneration. Here lay the key difference between scientific theories of culture and those of race. However influenced by inheritance, cultures could, and often should, be changed. The appropriate, measured solution was to retain certain traditions and symbols as part of a cosmopolitan aesthetic, provided they could be detached from, and made inferior to, a more "ascetic," responsible approach to questions of policy, particularly in the foreign sphere. This was the same doctrine of simultaneous cultural tolerance and geopolitical realism advocated by Cold War liberals. *The Chrysanthemum and the Sword*, which attempted to democratize the complex ethic suggested by the title's dualism, concluded that "peace of the world depends not on a liberal intellectual elite controlling world events but on the peoples of the world controlling themselves in accord with the values of that elite."[53]

This summary strikingly prefigures Michel Foucault's definition of *governmentality*, a "conduct of conduct" not necessarily tied to the state but often finding a comfortable home there. That this activity was tied, in the case of Japan, not just to military occupation, but also to more 'subtle' techniques of psychological warfare and economic liberalization, is worth noting. More generally, national character studies, with their appeal to tolerance and diversity balanced by suggestions for manipulation, and with their abstract categories of populations and partially autonomous individuals, can be linked productively to discussions of governmental reason. It is thus relevant that the Second World War and its aftermath were described as an "administered age," a high

[53] Shannon, "A World Made Safe for Differences," p. 675.

modernist epoch of planning and ordered human relationships. These relationships could take the shape of "totalitarian regimes," new international organizations such as the United Nations or the World Bank, or the blooming bureaucracy and global commitments of the United States itself.[54]

The role of the social scientists in the OWI was clear. They were to provide regional intelligence, composed after a good deal of basic fact compilation, to those who were in a position to use it. Whether naïve, over-confident or moved by the extremity of the situation, these same scholars frequently failed to question the interpretation of their studies. Instead, they believed that their more sophisticated analyses were a distinct improvement over impoverished military logic. Yet their analyses could not be *too* sophisticated, populated with professorial principles and theories. As was the case at the Ethnogeographic Board, the OWI's superiors demanded rapid syntheses, a call which surely influenced the cast of certain claims. Those involved with OWI who were not social scientists – journalists, advertising executives, public relations consultants, and others – had little tolerance for pursuits that were not seen to be practical. Relevant sources were not always on hand, research had to be marketed intensively to secure an audience, and other agencies, competing for this attention, produced overlapping or contradictory reports. One academic veteran of the Overseas Branch was certain of the resulting subjectivity, but questioned it from another direction, bemoaning the infrequency of systematic, scientific analysis that pooled "the available data and

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[54] Pendleton Herring, "The Social Sciences in Modern Society," *Items* 1.1 (1947), pp. 2-6; the quote is from p. 6. On governmentality, see the essays (including those by Foucault) in Graham Burchell, Colin Gordon, and Peter Miller, eds., *The Foucault Effect: Studies in Governmentality* (Chicago: University of Chicago Press, 1991), and Mitchell Dean, *Governmentality: Power and Rule in Modern Society* (London: SAGE, 1999).

information of all experts."[55] The centralization efforts undertaken during the war were clearly insufficient for some.

It was still assumed by most social scientists, regardless of their workplace, that improving understanding of unknown places – in this case, not of terrain but of national cultures – would reduce ignorance and thereby improve the prospect of cooperation with the United States not only during, but also after, liberation. Knowing your enemy, or your ally, for that matter, also required and made possible further study of "oneself in order to know how to use one's own strengths" – the novel preoccupation of texts such as *And Keep Your Powder Dry*. This was the central dialectic of national character studies that is too often hidden, or phrased as a dichotomy: the uncertain distinction between "social engineering," or the applied aspect of anthropology and related disciplines directed at other cultures, and the "cultural critique" directed toward the critic's own nation. These indefinite cases are undoubtedly dependent on one another, in the manner that all discourse on a world beyond American borders was linked intrinsically to America, in the process calling into question the strength and legitimacy of those borders themselves. But regardless of the paradox within 'national' anthropology, nations or cultures, as units of analysis, remained unquestioned, singular vessels which could be filled with the facts and conclusions generated by social science. The objects of

[55] Leonard W. Doob, "The Utilization of Social Scientists in the Overseas Branch of the Office of War Information," *The American Political Science Review* 41.4 (1947), pp. 649-667; the quote is from p. 652. Doob, a Yale psychologist, was Ruth Benedict's supervisor for a time at the OWI. See also Allan M. Winkler, *The Politics of Propaganda: The Office of War Information, 1942-1945* (New Haven: Yale University Press, 1978).

investigation, and their positions with respect to investigators, are of more importance than gestures to distance or the authenticity of cultural borders.[56]

In its most simplistic variants, national-character study documented the acquisition by a culture of a singular personality. To create unity and pattern in a world of shifting alliances and heterogeneous populations, an integrated whole had to be created and bounded, at both cultural and global scales, and history had to be de-emphasized in favour of timeless categories borrowed from fields such as psychiatry. Recognizing and defining this order meant an increased awareness of one's own pattern. Advocates of this approach focused on cultural anthropology and psychology: Benedict, for her part, was, like Geoffrey Gorer, obsessed by child-rearing habits, if in a less psychoanalytic register. Yet a largely unstated geographical element exerted significant influence as well. Even if certain habits might cut across regional and other differences, such speculation was halted by the geopolitical exigencies of war, which favoured blocs and states. In this respect Japan, widely viewed as completely homogeneous, was the perfect case study, as it was set apart from the United States through strategies of demonization to a greater degree than any other foe. Such strategies were not always lessened by the judgments of culture-at-a-distance studies. Benedict's interest in challenging stereotypes did not prevent her from repeatedly contrasting Japanese and American values in gestures that were plainly Orientalist. Although Benedict and other innovative theorists such as Bateson were keenly aware that characters were constructed markers of difference depending on stereotypes, they defended these formations as nonetheless significant. They were norms from which one could speak of alterity –

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[56] Modell, *Ruth Benedict*, pp. 269, 277; Federico Neiburg and Marcio Goldman. "Anthropology and Politics in Studies of National Character," trans. Peter Gow, *Cultural Anthropology* 13.1 (1998), pp. 56-81;

without fully comprehending complicity, whether immediately or though military application, in the continuation of essentialism.[57]

But this long-range scrutiny aided by the compilation of various data sources and *not* by personal experience necessarily adopted a detached perspective, more prone to generalization and abstraction than even the most egregious colonial ethnographies. Grounded observation had been replaced by library research, interviews, study of popular cultural sources, and even statistical analysis. Individuals remained blurry and were relatively devoid of agency. These were all common themes in the study of totalitarianism that dominated Cold War scholarship on the equally inaccessible Soviet Union, its satellites and, later, China.

Hiroshima did not diminish Mead's interest in national cultures or in associations with the military. Shortly after the war, she and Benedict received a grant from the Human Resources Division of the Office of Naval Research and, perhaps to limit association with wartime propaganda efforts, set aside the term "national character" for "cultures at a distance."[58] The "Research in Contemporary Cultures" initiative at Columbia University continued well after Benedict's untimely death in 1948, and was extended into "several successor projects," on Soviet Culture (for the RAND Corporation), and Contemporary Cultures (for the ONR and MIT's Center for International Studies). Attention had shifted from Japan to the complex terrain of post-

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the quote is from p. 65.

[57] Modell, *Ruth Benedict*, pp. 278-279, 281; Benedict, *The Chrysanthemum and the Sword*, pp. 20-21, 28; Shannon, "A World Made Safe for Differences," p. 667; Neiburg and Goldman. "Anthropology and Politics," pp. 65-66. On the demonization of Japan(ese), see Dower, *War Without Mercy*.

[58] Modell, *Ruth Benedict*, pp. 292.

war Europe. The ultimate result was a "manual," presented first to the ONR in the autumn of 1951 and then published for popular consumption in 1953.[59]

In a section of this book titled "Political Applications," Mead noted that the methodology outlined in the manual had already aided in military occupation, facilitating interaction with allies and partisan groups in enemy countries, estimating the capabilities of opponents, and preparing foreign policy documents. All of these tasks required a diagnosis of "cultural regularities in the behavior of a particular group or groups of people that are relevant to the proposed action." Whether issuing propaganda, offering threats of reprisal, or announcing a new regulation, a "specific plan or policy" was consistently the anchor for cultural study, which would be used to predict the success of such plans and policies. For Mead, 'regularities' were most valuable when applicable to large groups of individuals, and fairly long stretches of time. For instance, it was only after an interval that "patterns of reaction" to the bombing of German cities could be determined, and set against pre-existing predictions and panic typologies.[60] Not only did work on national character fail to fade after its flowering in the Second World War, then, but it also proved easily translatable – perhaps after shedding certain 'softer' cultural and psychological elements, and occasionally shifting its spatial boundaries – to a much more widespread and mainstream form of social science. Indeed, given the roots of this work in international relations and its most extreme, and integral, aspect – war – it is

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[59] Margaret Mead and Rhoda Métraux, eds., *The Study of Culture at a Distance* (Chicago: The University of Chicago Press, 1953); see also Eric R. Wolf and Joseph G. Jorgensen, "A Special Supplement: Anthropology on the Warpath in Thailand," *The New York Review of Books* 15.9 (November 19, 1970), available at www.nybooks.com/articles/10763.

[60] Mead and Métraux, eds., *The Study of Cultures at a Distance*, p. 397. On urban bombing, see Chapter Five.

reasonable to suggest that it owes much to the discourses and institutions of modern militarism.

The Value of Classification

> In the recent war most of the belligerents compiled encyclopedias on countries they were contending with or which they planned to occupy or otherwise swing into their orbits. These encyclopedias should be conceived of either as a large file of knowledge in folders in a filing cabinet or in some sort of finished book form.... Their basic aim was to provide the strategic planner with enough knowledge of the country in question to make his over-all calculations on its attributes as a zone of combat.
>
> - Sherman Kent [61]

Other anthropologists who pursued similar comparative work, particularly scholars who strayed into positivist and behavioural analysis, relied heavily on the methods of George Murdock, the driving force behind Yale's Cross-Cultural Survey and its second incarnation, the Human Relations Area Files (HRAF), which was initiated in 1949. HRAF, also housed at Yale but distributed in component parts to interested parties, was designed to provide students of humanity with a suitable statistical storehouse, a "laboratory without walls." The aim was equally scientific, but rather than traditional physical barriers

> there would be juxtaposed, as it were, dioramas depicting life processes and cultural activities against living backgrounds of each of the world societies known to man. These data would exist in printed texts and pictures, classified by topics; each society would have its own shelf. Once the many relatively small bits of knowledge were ordered into a consistent, cross-cultural scheme, new figures could be expected to emerge from the pattern...[and] students of human behavior would come into this laboratory to test their generalizations against primitive, historical, and contemporary societies.[62]

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[61] Sherman Kent, *Strategic Intelligence for American World Policy* (Princeton: Princeton University Press, 1949), p. 11.

[62] *Function and Scope of the Human Relations Area Files*, p. 3. That Murdock was a staunch opponent of Boasian anthropology does not lessen the similarities between his quantitative anthropology and the culture and personality school. Indeed, as I argue throughout this and the next chapter, it was 'area studies', as a military and intelligence initiative, which permitted such seemingly awkward juxtapositions. Much is made of the differences between Murdock and Clyde Kluckhohn, but it is worth noting that both were on the Committee for National Morale, and that Kluckhohn was one of the initial directors of the HRAF Board.

The explicit implication of this extraordinary passage was that 'primitive' societies, the foundation of the HRAF and the CCS, were neither historical nor contemporary, but *regional* – out of time and fixed in a certain space.[63] 'Historical', on the other hand, was not just a temporal category, but a means of positioning quasi-modern societies, such as Japan, close to but behind those deserving of the designation 'contemporary'.

The imaginative location of the primitive – the inversion of the 'national' – is also the terminus of the national character thesis, where the veneer of cultural difference can hardly disguise a resemblance to biological theories of race. Yet these places of the primitive – and the theories, rich in moralistic tenor, which created such cartographies – are not empty fantasy or the stuff of an innocent academic curiosity. The performative discourses of national character, "simultaneously descriptive and normative," should be considered as part of a larger, powerful apparatus that includes statements and practices of nationalism, citizenship initiatives and the behavior of individuals in contexts where statements of national character are employed "as an explanation, justification, or rationalization." All of these aspects are as applicable to 'America' as they are to a more typical subject of national caricature.[64] And although primitive societies were of interest only for their literal *presence in territory*, if these alien cultures should make progressive strides towards a contemporary status, an alternative treatment was required – one which required the attention of modernization theory. Culture and personality studies, after all, were molded in the context of anthropology among 'tribal' peoples. When these theories

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[63] See the discussion in Derek Gregory, "Power, Knowledge and Geography," in *Explorations in Critical Human Geography: Hettner-Lecture 1997* (Heidelberg: Department of Geography, University of Heidelberg, 1998), pp. 9-40.

[64] Neiburg and Goldman, "Anthropology and Politics," pp. 69-70; see also Cynthia Weber, "Performative States," *Millennium: Journal of International Studies* 27.1 (1998), pp. 77-95. The imperial archives of nineteenth-century Europe shared many of these characteristics.

traveled, savage characteristics could be found anywhere, and were particularly threatening when mixed, in equal value, with the seeds of modernity, industrialization, and political organization.

HRAF was, quite ordinarily, a wholeheartedly *national* project, "drawn upon by the CIA at least through 1967."[65] During the Second World War, ties were established between the Cross-Cultural Survey and Navy Intelligence. One result was a series of Navy Civil Affairs handbooks on segments of the Pacific Ocean, to be used for military government, that were based on CCS collections.[66] Recognizing the value of the CCS "for both scientific and practical purposes," the Carnegie Corporation, aided by SSRC, the Office of Naval Research and the Rockefeller Foundation, provided the funding for the expansion of the Survey into the Human Relations Area Files, in the understanding that duplicates of the files would be installed at the ONR and partner universities. At participating institutions (including the University of Chicago, Harvard University, and the University of Washington), filing cabinets held thousands of 5x8-inch cards (Figure 6). These were accessed through a master *Outline of Cultural Materials*, built up and sharpened over time from the beginnings of the Cross-Cultural Survey, describing the

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[65] Robin W. Winks, *Cloak and Gown: Scholars in the Secret War* (New York: William Morrow, 1987), p. 45; see also David H. Price, "Cold War Anthropology: Collaborators and Victims of the National Security State," *Identities* 4.3 (1998), pp. 389-430.

[66] For an example, see Military Government Handbook OPNAV 50E-1, *Marshall Islands* (Washington: Office of the Chief of Naval Operations, August 17, 1943). See also Bashkow, "The Dynamics of Rapport," p. 181. The Central European Section of the OSS's Research and Analysis Branch (see below) also produced a two-thousand-page Civil Affairs Handbook on Germany, brimming with collected facts and a fair amount of historical, professorial rumination. See Barry M. Katz, *Foreign Intelligence: Research and Analysis in the Office of Strategic Services, 1942-1945* (Cambridge: Harvard University Press, 1989), pp. 73-75. In Britain, teams composed chiefly of Oxford and Cambridge geographers produced a set of similar Admiralty Handbooks for the Intelligence Division of the Royal Navy. 31 large, area-specific handbooks (a total of 58 volumes) were produced. "The volumes were uniform in content.... The major headings are physical geography, history, peoples and administration, and economic geography, ports, and communications." See Leonard S. Wilson, "Some Observations on Wartime Geography in England," *Geographical Review* 36.4 (1946), pp. 597-612; the quote is from p. 603; W. G. V. Balchin,

intricacies of the classification system. To maintain the growth of the Files, the Army, Navy, Air Force and CIA all contributed $50,000 per year to this unclassified operation, which focused, not surprisingly, on Southeast Asia, the Soviet Union and Eastern Europe, Northeast Asia, and the Near and Middle East. However, when the returned value was judged to be minimal in 1954, this subsidy was cancelled, and replaced by a $4-million Army grant to produce 63 classified and unclassified handbooks on strategic regions, both 'friendly' and 'hostile'. These popular "plan-books," according to Clellan Ford of HRAF, supplemented "the existing National Intelligence Surveys, particularly with respect to cultural data of interest to the psychological warfare people and others interested in human behavior, living conditions, and the like."[67]

The public versions of these handbooks are, in contrast to Murdock's strict scientific objectives, highly descriptive, expanding the harsh syntax of HRAF index cards into a more readable format. But for Murdock there was little conflict between the "theoretical aims" and the "practical utility" of his classification projects. The definitive instance of this accommodation was the use of the Cross-Cultural Survey in Micronesia during the Second World War. Once freed from Japanese control, the archipelago increasingly fell under the dominion of the American Navy. Murdock, linked into the

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"United Kingdom Geographers in the Second World War," *The Geographical Journal* 153.2 (1987), pp. 159-180.

[67] Murdock et al., *Outline of Cultural Materials*, p. xv; Ford, *Human Relations Area Files*, pp. 6, 13; Wolf and Jorgensen, "A Special Supplement"; Clellan Ford to John W. Gardner, 6 January 1955, Series III, Subseries A, Box 174, Folder "Human Relations Area Files", CCNY. The areas covered by the HRAF handbooks produced for the Army reflected the priorities of the files themselves, but also the shift away from the South Pacific, Africa and Western Europe, all crucial to the various intelligence efforts of the Second World War, toward the key regions of the Cold War (see Chapter Three). Of the 63 Army handbooks, the Soviet Union and China, in particular, received detailed, multi-part treatment. See HRAF, *Laboratory for the Study of Man* (New Haven: Human Relations Area Files, 1959), pp. 51-52. For an example of the HRAF's Country Survey Series – the unclassified versions of the military texts – see George L. Harris, ed., *Egypt* (New Haven: Human Relations Area Files, 1957). HRAF also produced a related "Survey of World Cultures" series, including Thomas Fitzsimmons et al., *USSR: Its People, its*

new School of Military Government and Administration at Columbia University, was rapidly making efforts to complete the CCS file on Micronesia, and insinuated himself neatly with the upper echelons of the Naval command. Together with two Yale colleagues, John W. M. Whiting and Clellan S. Ford, he formed "Research Unit Number One" for Micronesia in the Naval Office of Occupied Areas in April 1943. There, the three processed data on Japanese possessions in the Pacific according to the CCS system. Murdock also immediately circulated a memo stating that even after the war, the "chief significance of these islands will remain their actual or potential use as sea and air bases." This opinion was received favourably by many Navy planners, but not by those in the State Department and elsewhere that envisioned Micronesia as one of many decolonized "trusteeships" that would gain independence but remain economically and politically linked to the United States.

Ultimately, the geopolitical fate of Micronesia fell between these two camps. The islands were "internationalized," but on the condition that they remained fortified, useful not only strategically but also for atomic testing. Whether for administration or testing, a "complete knowledge of the peoples of the area" was required, and the National Research Council set up a program dubbed the Coordinated Investigation of Micronesian Anthropology (CIMA), drastically expanding the field presence of social scientists in the Pacific. In addition to financial support from the Office of Navy Research, the navy also provided participating scholars with transportation, supplies from war surpluses, and other forms of assistance. For his part, Murdock had returned from the Pacific in 1945 convinced, in his words, "of the need of selling social science by demonstrating its

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Society, its Culture (New Haven: HRAF Press, 1960). Each series, and substantial development of the source files, was "made possible" (Ford, p. 15) by this Army contract.

practical utility." In a 1948 *Science* piece, he proudly claimed that CIMA "will shortly result in the most complete, comprehensive, and up-to-date scientific coverage of the people of any cultural or geographical area of the world." Murdock was clearly positioning CIMA's researchers alongside, and at the service of, government administrators. He had no interest in aiding or attempting to speak for the administered.[68]

The Navy was also concerned that in addition to the occasional visiting social scientist suiting their needs, a more permanent cluster of officials would be needed to participate in the structure of authority that was emerging in the southwestern Pacific, and elsewhere. In the case of Micronesia, personnel expected to interact with native populations would require more than instruction in standardized techniques of military governance. As a result, the Navy approved the establishment of a School of Military Government and Administration within the larger Program of Training in International Administration at Columbia University. At the School, officers followed a curriculum that included training in local language, customs, and the history of political institutions (both native and colonial), as well as the technical aspects of military rule – a course list that influenced the formation of the Civil Affairs Training Schools.

For Columbia faculty, the political scientist Schuyler Wallace noted in 1944, it was the Navy's intense interest in a particular area, combined with the demand for experts across the social sciences found in the Administration Program, which "raised very forcibly...the question of the validity and the potentialities of what has come to be

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[68] The preceding two paragraphs draw on Bashkow, "The Dynamics of Rapport," pp. 180-185; George P. Murdock, "New Light on the Peoples of Micronesia," *Science* 109.2808 (October 22, 1948), pp. 423-425; the quotes are from pp. 423, 424. See also Ford, *Human Relations Area Files*, pp. 7-8. As in the case of national character studies, John Embree, who like Murdock was at Yale, challenged his colleague's colonialist voice, which in his opinion was not unlike "Kipling singing the praises of the docile brown man – when ruled by western man." See Embree, "A Note on Ethnocentrism in Anthropology," pp. 431.

called the concept of area studies." Wallace, the Director of both Program and School, was aware of the dangers that lurked within the regional approach, including the potential for superficiality and the related absence of *universals* found most forcibly within "that thing called Christendom." Nonetheless, grouping disciplines, he argued, might "produce an understanding on the student's part of the whole life of some particular region, rather than an understanding of some artificial segment thereof, such as is obtained through the study of comparative government or comparative literature."[69] These were deliberately chosen contrasts, placing the natural status and value of an area before comparative insights gleaned through disciplinary inquiry across areas.

Social scientists joining expeditions to the Pacific were encouraged to proceed with the assistance of the Human Relations Area Files. HRAF's strategic value was thus complemented by a scientific motivation. Reports and guides released from the Yale headquarters audaciously deployed the rhetoric of laboratory science. This laboratory, however, was *mobile*, a beacon of certainty and a source of detail that could travel, in the form of jottings copied from a succinct index card, into the field. In this respect HRAF was a kind of survival guide for academic voyageurs not as an aid to bodily sustenance but to scientific solidity far from an Ivy League campus, and *a line back* to the certainties of that campus as well (Figure 7).

The authors of the compact *Outline of Cultural Materials* were aware of this circularity, claiming that the manual itself had uses in the field, specifically by concisely

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[69] Schuyler C. Wallace, "The Naval School of Military Government and Administration," *Annals of the American Academy of Political and Social Science* 231 (January 1944), pp. 29-33; the quotes are from p. 32. See also Sydney Connor, "The Navy's Entry into Military Government," *Annals of the American Academy of Political and Social Science* 267 (January 1950), pp. 8-18. According to Murdock, more officers serving in the Trust Territory passed through the School of Naval Administration at Stanford; see "New Light on the Peoples of Micronesia," p. 423.

calling attention to a range of suggestive phenomena that were often "omitted in descriptive accounts," or scattered messily in a notebook. Because the scholarly categories had been standardized, it was easy to chart differences and similarities between different groups. But these groups – and their *locations* – were taken-for-granted. While Murdock and his HRAF collaborators were quick to acknowledge that the abbreviated *Outline* could by no means encapsulate the complexities of a given culture, they recommended it be consulted in advance, and then kept on hand in foreign places, as a means of saving time, revealing "gaps" and "inconsistencies" which could then be erased by the adept social scientist. The gesture to social science was a deliberate one. Fearing that only anthropologists would be attracted to the resources within HRAF, proponents asserted that the Files would serve the "universal sciences" that were "concerned with human behavior in broad perspective, i.e., with establishing valid principles not limited in time or space."[70]

To achieve these detached principles, users of HRAF would have to work up from the bedrock of cross-cultural comparison. Once a sufficient level of generalization had been attained, they would then be able to cast off the regional constraints that were built into the very architecture of the Files. But only by framing the Files as a single object, and by practicing applied anthropology in the service of power, was generalization permitted, and encouraged. One document summarizing the genesis of HRAF put it best:

> Much of the basic information on the peoples and areas of the world can be brought together, organized so that the fact dealing with the same topic and the same people or area lie side by side, and cast in a common language.[71]

This was the dialect of social science – but also of empire.

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[70] Murdock et al., *Outline of Cultural Materials*, pp. xxi, xxii, xxiii.
[71] "History of the Beginnings of Human Relations Area Files," October 1949, Series III, Subseries A, Box 174, Folder "Human Relations Area Files", CCNY.

Shadows of the Agency: JANIS and the OSS

While the Navy was using Cross-Cultural Survey material for handbooks, it was also producing, in a joint initiative with the Army, a more *basic* form of regional intelligence. These were the Joint Army-Navy Intelligence Studies (JANIS) – huge, anonymous, and confidential volumes, bursting with aerial photography and comprehensive detail on the resources, topography, infrastructure, and other facets of a strategic region.[72] Contributions arrived from over 20 sources, including the Board on Geographical Names, the Coast and Geodetic Survey, the Office of Strategic Services, and the Weather Division of the Army Air Force. The intention, as a study on Korea stated, was to "make available, subject to limitations of time and material, one publication containing all the necessary detailed topographic information upon which may be based a plan for military operations." Most of the chapters, including those on general military geography, were descriptive in style, focusing on physical features and impediments to an invasion. These sanitized catalogues were backed up by significant theoretical work. The model on "sea, swell, and surf forecasting," for example, was developed for the Navy by the prominent oceanographer Harald Sverdrup. But the JANIS volumes were, according to one immediate retrospective, the most important and reputable example of war's "detailed regional surveys." Given this approach it is not surprising that geographers took a significant role.[73]

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[72] For a representative example, available in the New York Public Library's Humanities and Social Sciences Branch, see JANIS 150, Chapter IX, *Joint Army-Navy Intelligence Study of Borneo: Resources and Trade* (Washington: Joint Intelligence Study Publishing Board, May 1945).

[73] JANIS 75, Chapter I, *Joint Army-Navy Intelligence Study of Korea: Brief* (Washington: Joint Intelligence Study Publishing Board, April 1945), p. 3. A copy of this study, in full, is in Box 1 of the Leonard S. Wilson Collection, Georgetown University Special Collections (hereafter LWGU). Wilson, a Professor of Geography at Carleton College, was a lieutenant in the U. S. Naval Reserve and Deputy Chief of the Map

Like the CCS and its post-war progeny, the JANIS project – as the list of contributors indicates – was initiated to clarify and integrate the muddle of imbricated information-analysis produced by various branches of the American government. A meeting of intelligence heads, including William Donovan of the OSS, led to the formation of a Joint Intelligence Study Publishing Board that would, between April 1943 and July 1947, publish 34 comprehensive studies enabled by unprecedented interdepartmental cooperation. Before he joined the Geography faculty at Harvard (and later, at the University of Washington), Edward Ullman was a member of this Board and, ultimately, its director. Ullman replaced Kirk Stone, another geographer from the University of Wisconsin, as the OSS representative to the Board in 1944. Aside from its relevance as yet another policy-driven compilation of areal knowledge, JANIS was also the template for the CIA's National Intelligence Surveys (NIS), which began just four months after "the Agency" opened its doors (to a select few) in September 1947. The NIS program, designed to encompass the paradoxical requirement of additionally comprehensive information in 'peacetime', required improved geographic gazetteers and better maps. The Department of the Interior produced the former with help from the Board of Geographic Names, while the CIA took care of the cartography. The NIS was

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Division (where he directed the Map Information Section) of the OSS's Research and Analysis Branch during World War II. Richard Hartshorne et al., "Lessons from the War-time Experience for Improving Graduate Training for Geographic Research," *Annals of the Association of American Geographers* 36 (1946), pp. 195-214; the quote is from p. 198. On oceanography, see Ronald Rainger, "Science at the Crossroads: The Navy, Bikini Atoll, and American Oceanography in the 1940s," *Historical Studies in the Physical and Biological Sciences* 30.2 (2000), pp. 349-371. Sverdrup's relationship with the military was a complicated one: see Naomi Oreskes and Ronald Rainger, "Science and Security Before the Atomic Bomb: The Loyalty Case of Harald U. Sverdrup," *Studies in the History and Philosophy of Modern Physics* 31.3 (2000), pp. 309-369.

also supplemented by the classified country surveys produced for the CIA and the Department of Defense by the Human Resources Area Files.[74]

Edward Ullman also headed the Transport Section of the OSS's legendary Research and Analysis (R&A) Branch.[75] R&A was the heart of the OSS, the agency responsible for collecting and, more importantly, for *evaluating* foreign intelligence – a centralized capacity that the United States, alone among the 'great powers', lacked before the war (Figure 8). And given the linguistic and research abilities and the regional awareness required of intelligence analysis, the scholarly community was an obvious place to hunt for talent. In advance of the OSS's secret intelligence or covert operations divisions, the R&A branch was in place, charged more with the study and 'finishing' of raw, compiled information than with explicit policy recommendations. It was home to a group of scholars that can only be described as remarkable, and the history of their fusion of scholarly techniques with the data of war makes for compelling reading. Led by the Harvard historian William Langer, R&A attracted to its staff such diverse individuals as Carl Schorske, Walt Rostow, Wassily Leontief, Arthur Schlesinger, Jr., Herbert Marcuse, Franz Neumann, Paul Sweezy, and, in addition to Ullman and Stone, the geographers Edward Ackerman, Richard Hartshorne and Preston James.

As in the case of the Manhattan Project, military officials (in this case, the OSS's head, General William 'Wild Bill' Donovan) were strikingly tolerant of left-leaning

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[74] This capsule history of JANIS and its ties to the CIA can be found at the website for the World Factbook, the annual summary and update produced to complement Intelligence Studies. See http://www.cia.gov/cia/publications/factbook/docs/history.html. On Ullman, Stone and JANIS, see Chauncy D. Harris, "Edward Louis Ullman, 1912-1976," *Annals of the Association of American Geographers* 67.4 (1977), pp. 595-600, especially p. 596; "Directive on Joint Army and Navy Intelligence Studies (JANIS)," 1 July 1943, RG 226 (Records of the Office of Strategic Services), Entry 001, Box 1, Folder 9, National Archives and Records Administration (hereafter NARA), College Park, Maryland; M. Crane, "The National Intelligence Surveys," n.d., RG 59 (Records of the Department of State), Entry 1595, Box 9, Lot 69D 267, NN3-93-102, NARA.

academics deemed useful to the American cause. R&A's list of luminaries alone enabled the OSS to carve out a niche in the crowded field of Washington advice clearinghouses. With certain exceptions, the core of this masculine community was, especially early on, drawn from an Ivy League cadre of young gentleman scholars whose education had instilled the merits of what Schlesinger called "thoroughly objective and neutral" research techniques in the humanities and social sciences. Schlesinger's objectivity was more moral than methodological; he was no supporter of an abstract empiricism, for instance. But those recruited also "possessed expert knowledge of particular regions or localities." Many were historians and geographers who, unlike their counterparts in economics, were not familiar with the ways of Washington.[76]

As their ranks diversified,[77] R&A scholar-analysts remained united by an opposition to totalitarianism, and were aided by an approach to history and the social sciences that spurned relativism. The certainty they sought in 'science' at R&A was a product of larger currents washing through American culture during the build-up for war.

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[75] Harris, "Edward Louis Ullman," p. 596.

[76] The preceding two paragraphs draw on Katz, *Foreign Intelligence,* p. 2; Barry Katz, *Herbert Marcuse and the Art of Liberation: An Intellectual Biography* (London: Verso, 1982), p. 112; Bradley F. Smith, *The Shadow Warriors: O.S.S. and the Origins of the C.I.A.* (New York: Basic Books, 1983), p. 362, 379; Ray S. Cline, *Secrets, Spies and Scholars: Blueprint of the Essential CIA* (Washington: Acropolis Books, 1976); "Memorandum on the Functions of the Research and Analysis Branch," October 30, 1942, RG 226, Entry 145, Box 2, Folder 24, NARA. Any consideration of World War II espionage, or even just the R&A Branch, faces a daunting challenge; not surprisingly, the body of literature on the subject, from nostalgic to critical, archival to memoir, is vast. My aims here, as will be clear, are more limited. Three of the best sources on the OSS and R&A are Katz, *Foreign Intelligence*; Winks, *Cloak and Gown*; and Smith, *The Shadow Warriors*, especially Chapter Eight.

[77] Diversification, of course, is a relative term. According to Smith, *The Shadow Warriors*, pp. 378-379, the R&A broke down significant barriers for Jews (some non-practicing) who would not have been received warmly in the pre-war Ivy League. However, although R&A "had a much better record on the employment of women and ethnic minorities than other branches of O.S.S. or of the government in general," women were almost uniformly kept to low-level researcher positions, and "Langer's eagerness to impress those in authority, especially General Donovan and his military entourage, undoubtedly contributed to R. and A.'s tendency to have women walk behind and to the left. But other factors, including simple racism, were involved in the way the branch treated some ethnic minorities," particularly "those of Asian extraction." See also Robin W. Winks, "Getting the Right Stuff: FDR, Donovan, and the

It was also, of course, the foundation of the American intelligence industry. But within the walls of the OSS, a combination of the "wide use of sources, avoidance of the first person singular, and an absence of overt political partisanship" was usually sufficient to earn the stamp of scientific scholarship. When formal reports authored by more than one researcher and containing summaries and conclusions were prepared, they were often heavily edited, usually within Hartshorne's influential Projects Committee, and stripped of identification and emotion. This collaborative, interdisciplinary, and surprisingly efficient system was also new to many of the historians and geographers on staff, but it was essential to the preparation of integrated studies – the work found so useful by R&A clientele. This shattering of the "artificial barriers separating one approach from another," in Langer's words, led to a methodology that would receive the name *strategic intelligence*. But it would also, as McGeorge Bundy – Harvard Dean of Arts and Sciences, national security advisor, president of the Ford Foundation, and consummate Cold War intellectual – famously put it, have a direct influence on post-war area studies programs, which were invariably "manned, directed, or stimulated by graduates of the OSS." By the end of the war, many of the leaders of R&A had concluded that a more lasting connection between universities and intelligence agencies for research on foreign regions was a worthwhile enterprise – a judgment shared by State Department planners such as George Kennan and John Paton Davies.[78] As the next chapter shows, a

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Quest for Professional Intelligence," in George C. Chalou, ed., *The Secrets War: The Office of Strategic Services in World War II* (Washington: National Archives and Records Administration, 1992), pp. 19-38.

[78] Smith, The Shadow Warriors, pp. 361-363, 371-372; Peter Novick, *That Noble Dream: The "Objectivity Question" and the American Historical Profession* (Cambridge: Cambridge University Press, 1988), p. 281. Bundy is quoted in Winks, *Cloak and Gown*, p. 115; see also Sigmund Diamond, *Compromised Campus: The Collaboration of Universities with the Intelligence Community, 1945-1955* (New York: Oxford University Press, 1992), pp. 10, 53. As Smith (p. 372) notes, this connection between academia and intelligence was, during World War II, "hardly a shady plot," but a point of widespread, unconcerned certainty. Bundy's comments came in address titled "The Battlefields of Power and the Searchlights of the

remarkable number of OSS veterans and social scientists working in similar wartime capacities continued to consult for the state.

The dynamic of regional and topical study within R&A was not always harmonious. One history notes the discord in 1943 between 'regionalists' and 'functionalists', a preview of a similar clash amongst geographers after the war. William Langer wrote after the war that some R&A analysts were "shocked...to find how narrow much of our specialization had become and how difficult it was to get people from the various disciplines to work together." Contributing to these disputes, in December 1944, reflecting somewhat sourly on his experiences on the JANIS Board, Edward Ullman composed a memo on "topographical intelligence." His contention was that "specialized knowledge of a subject is more important than knowledge of an area." He went on to note that a shift to "functional" organization had improved the quality of the JANIS studies, but he also recognized the need for a related "breed of *intelligence* cats" to bring discussions back to a regional scale at any time.[79]

Perhaps the broad regional divisions of R&A justifiably frustrated Ullman. After all, one sub-branch covered Europe *and* Africa. But his comments also reflected the

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University" (published in 1964), in which the invasive, thorough vision of the latter could only be realized, as he put it, "when there is a deep engagement of sympathy to the battlefield of politics and to the way the men on the battlefield conceive of their war." Quoted in Diamond, p. 10.

[79] Smith, *The Shadow Warriors*, p. 364; William L. Langer, "Scholarship and the Intelligence Problem," *Proceedings of the American Philosophical Society* 92.1 (1948), pp. 43-45; the quote is from pp. 44; Edward L. Ullman, "Notes on Organization of Topographical Intelligence," 13 December 1944, RG 226, Entry 001, Box 1, Folder 18, NARA, original emphasis. The structure and distribution of personnel in the R&A changed frequently, and I make no attempt to account for the various manifestations and multiple positions held by Branch members. There were also resignations: Edward Ackerman, for instance, had already returned to Harvard's Department of Geology and Geography from his position as Assistant Chief (for topographic intelligence) of the Europe-Africa Division by January 1944. His letter to William Langer, however, was extremely warm, describing his OSS time as "the most valuable experience of my life." See Ackerman to Langer, and Langer to Ackerman, 15 January 1944, RG 226, Entry 001, Box 4, Folder 11, NARA. Ackerman's letter is dated January 3, 1943, but this is an error; see the innocuous "Interoffice Memo" from Ackerman to Hartshorne, dated January 5, 1943, RG 226, Entry 001, Box 4, Folder 1, NARA.

extent to which a class of regional spaces had become naturalized during World War II. Although JANIS texts were divided into the functional intelligence categories that Ullman lauded, the purpose of the joint effort had always been to collect information on a specific strategic environment. All of the details within each chapter referred back to that environment, whether Borneo or the Caucasus. More importantly, the regions of JANIS were closed areas that could be captured descriptively, and areas that matched the scope of ongoing or potential military operations. This operational value may have made them more refined than other, similar expressions of regionalism, but all shared a typology of knowledge and a strategic imperative.

Ullman continued to contribute to the JANIS effort after the war. In March 1946, as studies on the "European USSR" and Manchuria were prepared, in the capacity of Executive Secretary of the Joint Intelligence Studies Planning board he drafted a report titled "The Future of JANIS." This document noted the use of JANIS across the armed forces, including "the military training system," and, once declassified, within other government departments. The relevance of these "studies on foreign areas," Ullman argued, would linger "because of the static nature of much of [their] content," an inert quality which presumably included both physical and human geography. However, some of the contributors could simply not keep up with the increased demand of the *post-war* period. Ullman wrote that as a result of "the widespread nature of American interests, more of the world needs to be covered now than during the war when efforts were concentrated on theaters of operation." He did not anticipate the appropriation of JANIS into the not-yet-official Central Intelligence Agency, but he was aware of the rationale for the continued production of the studies. The intent was to provide "handbook

material" for traveling American diplomats and politicians, prepare the military for minor "policing" duties characteristic of the Cold War and, finally, to contribute to intelligence tasks that grappled with new methods of warfare, particularly those including the atomic bomb.[80]

The regional work of wartime intelligence also contained an explicitly cartographic element. The Map Division of the R&A Branch, headed by Arthur Robinson, collected and produced all forms of strategic cartographic information. Initially supplied by the Library of Congress, the Department of State, and the Army Map Service, the Division supplemented its collection after a national radio appeal by OSS Director Donovan. Walter Ristow, chief of the New York Public Library's Map Division, also headed the Geography Section of the War Department's New York Office of Military Intelligence, and worked with researchers from across the government who wished to make use of the Library's prodigious cartographic collection. All aspects of wartime cartography were aided by the 1943 reorganization of the Board on Geographical Names, which sought to regularize the proliferation of unfamiliar place-designations. These were titles that had, moreover, become "'fighting' words, tools of war."[81]

As the OSS grew, Map Division offices were established in Algeria, Egypt, India, and China, resulting in a number of rather audacious map-procurement expeditions. The London branch of the Map Division solidified agreements with the exiled governments of

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[80] Edward L. Ullman, "The Future of JANIS," March 1946 [probably March 2], RG 263 (Records of the Central Intelligence Agency) Entry 17, Box 5, Folder 65, NARA.

[81] Alice C. Hudson, "The Library's Map Division Goes to War, 1941-45," *Biblion* 3.2 (1995), pp. 126-147. This was not the only war use found for the NYPL. See John S. Fraser, "The Reference Arsenal: The New York Public Library Has a Military Value," *The Saturday Review of Literature* 26.32 (August 7, 1943), pp. 27-28. Meredith F. Burrill, "Reorganization of the United States Board on Geographical Names," *The Geographical Review* 35.4 (1945), pp. 647-652; the quote is from p. 647.

several European states to produce maps made from "delivered" geographic data. Captured maps and models were passed on to Washington from field offices, and OSS "map teams" examined German cartographic collections and interrogated Nazi military geographers. Admitting that "the overwhelming majority of American geographers had had little training in the use of maps, particularly foreign maps," the Division's Deputy Chief suggested that the subject of map information might be included in any reevaluation of geographical inquiry focusing on "systematic" elements. He was, on the other hand, impressed with the regional achievements of the Division, suggesting that they stretched far beyond "military purposes."[82]

The millions of items collected by the busy Map Division demanded the development of novel, expanded classification and cataloguing standards. After casting around for suitable precedents, the decision was made to "make a fresh start." Not surprisingly, the primary segregation of materials was by area. While this was by no means radical, the choice of appropriate areas does merit mention. Aware that political factors were central to "most maps," Division researchers identified an important cartographic class that did not conform to global, hemispheric, or continental scales: "parts of the world which are smaller than continents, but contain more than a single political unit." The solution was the partition of the world into 22 "primary regions," including oceans and the poles, broken down further by secondary and tertiary filing categories. Primary regions, it was assumed, were large enough to accommodate

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[82] Leonard S. Wilson, "Lessons from the Experience of the Map Information Section, OSS," *Geographical Review* 39 (1949), pp. 298-310; Wilson, "A Functional Atlas of Wartime (Goering's Atlas)," *Annals of the Association of American Geographers* 37.3 (1947), pp. 182-184; Wilson, "A Geographical Intelligence Document (Atlas de l'Espagne)," *Annals of the Association of Geographers* 38.1 (1948), pp. 111-112; Wilson, "Assignment in Britain," 20 October 1944, in Box 3, LWGU. For a description of the Map Division, and of the other components of the R&A Branch, see "Research and Analysis Branch – Organization," August 1, 1943, RG 226, Entry 145, Box 2, Folder 24, NARA.

political change. This system was more flexible than segmentations dependent on more exact limits, but only insofar as political boundaries shifted. It was underwritten by cultural categories that could be *made to fit* an altered atlas. And the OSS cataloguing was, obviously, undertaken during a period of tremendous "alterations in the political control of territory," not just as a result of military campaigns, but also due to widespread decolonization. There was also the question of subject-classification, or the branches of "systematic geography," that appeared, in various combinations, on the same maps. These, however, presented a far less significant problem, since it was simply a matter of identifying appropriate aspects of the physical and cultural landscape, and attaching these subjects to an area.[83]

The bold exploits of the Map Division, of course, paled in comparison to other divisions of the Office of Strategic Services, particularly those that engaged in covert operations to support military campaigns and resistance movements. It is difficult to avoid the narratives of skullduggery and derring-do that proliferate in discussions of the OSS's more 'traditional' espionage branches. The anthropologist Carleton Coon, who operated under diplomatic cover in North Africa, summed these themes up by stating that "it is probably the secret ambition of every boy to travel in strange mountains, stir up tribes, and destroy the enemy by secret and unorthodox means." Such sentiments, part of a long tradition of masculine adventure travel, were neither novel nor remarkable, and can be found in a variety of literature relating to the Second World War, from the accounts of scholars such as Coon to manuals such as *Survival on Land and Sea* and the "Fighting Forces" handbooks distributed to voyaging soldiers. The 1943 *Pocket Guide to*

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[83] Leonard S. Wilson, "Library Filing, Classification, and Cataloging of Maps, with Special Reference to Wartime Experience," *Annals of the Association of American Geographers* 38.1 (March 1948), pp. 6-37;

Alaska, prepared by the Army with the assistance of the OSS, advertised the "close-up of America's last frontier in action" to those posted north.[84] Compact manuals and guides consulted and carried by soldiers and spies, in particular, were twentieth-century versions of the 'hints' for colonial travelers, enacting a "war on regions" in advance of departure, but concurrently gesturing to earlier journeys steeped in violence.[85]

Another anthropologist sent overseas on behalf of the OSS was Gregory Bateson, who spent much of 1944 and 1945 in Burma, Thailand, Ceylon, India, and China. Among his duties was the creation of false, exaggerated Japanese propaganda broadcasts in Thailand and Burma. Unlike his partner Margaret Mead, Bateson, who "took part in the communications systems which he helped to create or hoped to disrupt," grew disillusioned with applied anthropology after the war, perhaps because he had participated in much more 'negative' operations. Yet he seemed to throw himself headlong into his OSS tasks, which also included analysis of raw intelligence, composing papers on intelligence strategy, and even secret rescue missions. Nor did he hesitate to comment on the potential post-war role of the OSS in Asia, arguing, in the language of culture and personality studies, that an American neo-colonial order could, and should, be maintained by altering attitudes, and not necessarily the institutions of empire. By studying, encouraging, and shaping "native achievements," rather than imposing an

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the quotes are from p. 8.

[84] Carleton S. Coon, *A North Africa Story: The Anthropologist as OSS Agent, 1941-1943* (Ipswich, MA: Gambit, 1980), p. 3; Richard Phillips, *Mapping Men and Empire: A Geography of Adventure* (London: Routledge, 1997); Captain Stockbridge H. Barker, *So You're Going Overseas!* (Washington: The Infantry Journal, 1944); Special Services Division, Army Service Forces, United States Army, in cooperation with the Office of Strategic Services, *A Pocket Guide to Alaska* (Washington: War and Navy Departments, 1943). Much more work remains be done on what might be called the "geopolitics of travel." For an example from another conflict, see Matthew Farish, "Modern Witnesses: Foreign Correspondents, Geopolitical Vision, and the First World War," *Transactions of the Institute of British Geographers* 26.3 (2001), pp. 273-287.

external cultural model and risking the rise of "nativistic cults," the United States could ensure that nations such as India progressed in the appropriate direction. This was the classic psychological warfare approach standardized by the CIA after the war.[86]

David Price has argued that Bateson's belated dissatisfaction with applied anthropology was due to the bureaucratic structures of organizations such as the OSS, which rewarded coalescence and not criticism, leaving patriotic but doubtful social scientists to ameliorate unfortunate situations from within. This may be the case, and Price does not mention the additional *incoherence* wrought by the atomic bomb, a trauma that propelled Bateson further toward the clarities of cybernetics.[87] But while still in the field, he was able to compose a sobering memo to his OSS boss, William Donovan, just days after the use of atomic weapons on the populations of Hiroshima and Nagasaki. For Bateson, the atomic bomb altered the "relation between *attack* and *defense*," increasing the likelihood of psychological and economic warfare as those with and without the technology all sought to avoid atomic confrontation at all costs. Those agencies responsible for the indirect, "peaceful" methods of combat would thus be even more pervasive and powerful, although less so than the laboratories set up to produce atomic weapons or the Air Force planners who would strategize their use.[88]

The molding of bodies and minds only added to the post-war reputation of the OSS as an organization that produced extraordinary achievements in the field of

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[85] I thank David Nally for suggesting the phrase "war on regions." This, of course, is also a war on *populations*.

[86] David Price, "Gregory Bateson and the OSS: World War II and Bateson's Assessment of Applied Anthropology," *Human Organization* 57.4 (1998), pp. 379-384; Yans-McLaughlin, "Science, Democracy, and Ethics," pp. 202-203; Rhodri Jeffreys-Jones, *The CIA and American Democracy* (New Haven: Yale University Press, 1989).

[87] Price, "Gregory Bateson," p. 383; Yans-McLaughlin, "Science, Democracy, and Ethics," p. 214.

[88] Memo, Gregory Bateson to General Donovan, "Influence of Atomic Bomb on Indirect Methods of Warfare," 18 August 1945, RG 263, Entry 15, Box 2, Folder 35, NARA, original emphasis.

espionage. Part of this mythology resulted from the deliberate efforts of William Langer, the Director of R&A, who later took an additional hiatus from Harvard to establish the R&A-like Office of National Estimates at the CIA in 1950. He also assisted in the creation of the CIA's Office of the Historian, which subsequently churned out a series of official histories that held up Pearl Harbor as a singular event requiring response – more "preparedness" – and generally lionized William Donovan. One insider's account describes Washington officials

> astounded by erudite government reports in the language of Harvard, presented in *Reader's Digest-Life* style. The maps, the topographic models, and, in particular, some five-foot floating globes – supported on hidden ballbearings – brought distinction as well as occasional envy to the [OSS].[89]

Responding to these exaggerations and simplifications, revisionist historians of intelligence have described the OSS as "the product of foggy or even nonexistent reasoning allied to a large dose of bureaucratic opportunism boosted by effective hyperbole," its achievements overshadowed by the more practical successes of British and American military counterparts. A shrewd public relations tactician, General Donovan realized that the minds of R&A, however impressive to some, were hardly as magnetic as covert operations. A desire to remain in Donovan's favour led Langer to reluctantly move R&A, dubbed the "Chairborne Division" in Washington, closer "toward the battle zone," including a general emulation of the previously special targeting and mapping operations of the London branch. But Langer's preference for pure strategic intelligence also led him to build the intricate regional structure for R&A. His efforts were only partially successful at reducing the distinction between R&A and the rest of

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[89] Cline, *Secrets, Spies and Scholars*, p. 47. Langer, with Everett Gleason, deputy executive secretary of the National Security Council, also produced a massive two-volume account of the American entry into World War II for the Council on Foreign Relations. Funded by the Rockefeller Foundation, and bolstered

the OSS, and they were not aided by the reluctance of many R&A scholars, whether because of idealism or queasiness, to work in "tainted" political spaces such as China. Overall, the OSS became a "sideshow," if a successful one, since the obsessive bureaucratic battles fought by Donovan and others contributed to the emergence of a "full-blown national security state" and one of its key components, the CIA.[90]

Given this last contribution, to dismiss the OSS as insignificant is to follow an overly instrumental route. The national-security state so frequently associated with the Cold War United States was a complex entity. For one, it encapsulated all manner of intelligence production and analysis, informal and formal. The members of R&A were often several degrees from the production and practice of policy – and when they did move into these spheres, near the end of the war, ideological tussles became increasingly common, as in the case of a legendary dispute over the fate of the German Socialist Party between Hartshorne's Projects Committee and Marcuse, Schorske, and the Yale historian Sherman Kent, chief of the Europe-Africa Division. This was a disagreement that reflected the strains of interpretive and explanatory methodologies pushed together.[91]

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by access to classified material (thanks to the CIA and NSC affiliations of the authors), the books were effectively official histories. See Novick, *That Noble Dream*, p. 305.

[90] Rhodri Jeffreys-Jones, *Cloak and Dollar: A History of American Secret Intelligence* (New Haven: Yale University Press, 2002), pp. 117-118, 124, 132, 142-144; Smith, *The Shadow Warriors*, p. 365; Barry M. Katz, "The OSS and the Development of the Research and Analysis Branch," in Chalou, ed., *The Secrets War*, pp. 43-47. The presence of OSS components in the CIA was not inevitable; it followed a failed transplant (the Interim Research Intelligence Service) in the State Department. Two publicly available official histories are Arthur B. Darling, *The Central Intelligence Agency: An Instrument of Government, to 1950* (University Park: The Pennsylvania State University Press, 1990), which was controversial even within the CIA, and *War Report of the OSS* (New York: Walker and Company, 1976).

[91] Documentation of this disagreement – or at least Hartshorne's rather blustering opinion, and Langer's unhelpful reply – is in RG 226, Entry 001, Box 4, Folder 1, NARA. See also Smith, *The Shadow Warriors*, p. 364. Both Marcuse and Kent continued to work in the intelligence field after the war, and Marcuse was also linked to both Columbia's Russian Institute and Harvard's Russian Research Center. On Marcuse, see Katz, *Herbert Marcuse and the art of Liberation*, and Douglas Kellner, "Technology, War and Fascism: Marcuse in the 1940s," in Kellner, ed., *Technology, War and Fascism: Collected Papers of Herbert Marcuse, Volume One* (London: Routledge, 1998), pp. 1-38; on Kent, see Winks, *Cloak and Gown*; Kent, *Strategic Intelligence for American World Policy*.

But even when lost in the mazes of wartime Washington, R&A staff not only dispersed to new centres for the regional study of a global world, but they also amassed resources and experience on areas that roughly conformed to these same regions, most notably the Soviet Union. Langer, meanwhile, transferred a similar framework, and a few personnel, to the CIA, which was established in 1947.[92]

Men, Measurement, and Machines

Notwithstanding, indeed *because of*, the dangers that operatives were to face on overseas missions, the OSS established an elaborate program of behavioural testing to weed out unsuitable recruits. Assisted by consultants Clyde Kluckhohn, Alexander Leighton, and the prominent social psychologist Kurt Lewin, Office staff scrutinized the actions of over 5,000 candidates, in intensive three- or one-day camps in the Washington, DC area. The lengthy report of this "Assessment of Men," unpublished until 1948, was itself dense and heavily mathematical, the product of "months of statistical calculation" in tandem with IBM. It described a rigorous schedule of tests, interviews, group tasks, questionnaires, and physical activities, including a "map memory" exercise, all intended to shed light on general *variables* such as motivation, emotional stability, leadership, and initiative. A further series of "special qualifications," including physical ability, observing films and reporting, resistance to interrogation, and propaganda skills, were also considered. The aim was to move beyond distinct tests to an "organismic" understanding of the entire personality which, once built up, could then be dissected into component variables. What drove the results beyond mere psychoanalysis, the report

[92] Jeffreys-Jones, *Cloak and Dollar*, p. 146.

concluded, was work in anthropology and sociology that had "furnished evidence of the determining influence of different cultural forms, ideological and behavioral."[93]

These tests were conducted under the aegis of the OSS's Psychological Division, directed by University of California professor Robert C. Tyron. However, they were intended as a precautionary measure before successful candidates were sent on to other divisions. Yet the Psychological Division complemented its study of potential intelligence agents with a much broader morale initiative, designed to 'assess' domestic and foreign populations, which embraced the concept of national character and its "tools" of interviewing, surveys, and polls. Like their counterparts in agencies such as the Office of War Information, OSS psychologists were aware of the advanced nature of German psychology, which had already developed "effective methods of officer selection," and American experts did not hesitate to borrow from these human engineering procedures. What *determined* a successful spy or guerrilla was by no means certain. This was the rationale for the intensive, multi-faceted testing of large numbers of candidates. While some psychologists who worked on the Assessment project later regretted their actions or were troubled by the project's repeated "validation problems," others carried selection procedures to the much wider testing group of the public at large, convinced "that they had a valuable contribution to make toward viable human relations." While important, this split should not overshadow the claim that the pervasiveness of psychology and psychological expertise in the post-war period received a substantial boost from the

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[93] The OSS Assessment Staff, *Assessment of Men: Selection of Personnel for the Office of Strategic Services* (New York: Rinehart and Co., 1948), pp. 3-4, 30-31, 124, 467; James H. Capshew, *Psychologists on the March: Science, Practice, and Professional Identity in America, 1929-1969* (Cambridge: Cambridge University Press, 1999), pp. 111-114. That *Assessment* was publicly released is a testament to its function as a sign of scientific authenticity during a difficult time for the young CIA, but the methodology discussed, and the diction of this discussion, were so abstract that there was little chance any secrets would be revealed.

cocktail of patriotic service, practical value, and scientific opportunity that was Second World War social science. But this convergence had considerable consequences.[94]

The OSS Assessment was only a dramatic example of a much broader interest in military psychology and 'human engineering' during the Second World War. Yale's Robert Yerkes, known for his comparative research with primates and his direction of military mental testing in World War I, sought greater authority for the applied aspects of psychology that covered every type of military work, from training and morale to equipment design and punishment. Employing the term 'engineering' was simply an appeal to the authority of science, an attractive and acceptable means of crossing from animals and mechanisms to humans as subjects of study. Psychology was objective and biological, and could be used "at every stage in the life cycle" to facilitate 'adjustment' – in this case, mainly "matching human capacities to the technologies of modern warfare" – but larger questions of management and industrial capitalism were also at issue. This emphasis on psychology as a science was not received with complete enthusiasm by the powerful scientific community embodied in agencies such as Vannevar Bush's Office of Scientific Research and Development, a hesitancy reflecting the lengthy struggle for the legitimacy of social science that continued after the war in the debates surrounding the establishment of the National Science Foundation. But the conception of the Second World War as a singularly destructive example of human conflict aided promotional campaigns for the social sciences. That the psychological dimensions of hostility were

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[94] Herman, *The Romance of American Psychology*, pp. 9, 44-46; Capshew, *Psychologists on the March*, p. 5. Like other systemic methodologies, the "assessment method" later became a fixture in the management world. See Berkeley Rice, "From the OSS With Love: The Rise of a Testing Method," *Psychology Today* 12.7 (1978), p. 99. Similar, if less holistic, testing principles were also emerging in the educational sector during and immediately after World War II; see Nicholas Lemann, *The Big Test: The Secret History of the American Meritocracy* (New York: Farrar, Strauss and Giroux, 1999).

expanded during the 'peace' of the Cold War was simply viewed as proof of the continued importance of human engineering.[95]

Cyborg visions of bodily control and regulation were closely aligned with less ostensibly rational attempts to *view and shape* populations and individuals, whether foreign or domestic. And because an accessible, substantial group of subjects existed in the ranks of the American military – whose successes, it was assumed, could be improved with the correct conditioning – social scientists interested such matters were intrigued by the prospects of research in such a "laboratory." It was the mix of practical merit and theoretical potential that was so exciting. Some of the same scholars who worked with the OSS could thus also prepare *Psychology for the Fighting Man* (1943), a pocketsize tome whose circulation by the end of the war totaled over 400,000. Rewritten from the manuscripts of "experts" in "popular form without sacrifice of its scientific accuracy," the book, like *Survival on Land and Sea*, adopted a soothing, perfunctory tone in the description of gruesome events and behavior. Ranging across the spectrum of psychological discourse, it also offered "a unifying conceptual framework" that balanced laboratory results with battlefield advice.[96]

Psychology for the Fighting Man also moved smoothly from group behavior to the individual brain, and from landscapes of combat to spaces of the body – militarizing

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[95] Robert M. Yerkes, "Man-Power and Military Effectiveness: The Case for Human Engineering," *Journal of Consulting Psychology* 5.5 (1941), pp. 205-209; Walter V. Bingham, "Military Psychology in War and Peace," *Science* 106.2747 (August 22, 1947), pp. 155-60; Capshew, *Psychologists on the March*, pp. 48-51, 54, 144-145; Donna J. Haraway, "A Pilot Plant for Human Engineering: Robert Yerkes and the Yale Laboratories of Primate Biology, 1924-1942," in her *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (New York: Routledge, 1989), pp. 59-83. On the OSRD and the NSF, see Daniel J. Kevles, "The National Science Foundation and the Debate over Postwar Research Policy, 1942-1945: A Political Interpretation of *Science, the Endless Frontier*," *Isis* 68.1 (1977), pp. 4-26; Daniel Lee Kleinman and Mark Solovey, "Hot Science/Cold War: The National Science Foundation After World War II," *Radical History Review* 63 (1995), pp. 110-139.

all of these in the process. An early chapter, for instance, was titled "Sight as a Weapon," and lauded the eye as "one of the most important military instruments that the armed forces possess." The combination of eyes, ears, brain, and muscles formed the "indispensable tools of war," and pieces of military equipment, including the scientific innovations of wartime laboratories, were only extensions of bodily power and ability. By establishing this hierarchy and prioritizing bodies – which were one with 'the mind' in the rhetoric of human engineering – psychologists were claiming space for the legitimacy of their *insights*. But they were also solidifying a concept of the "man-machine unit," such that the truly effective 'soldier' had to meld technological design with human training.[97]

Conclusion: Geography's Wars

> That "imaginative grasp of space" which science shares with poetry seemed somehow to have been impossible to attain until our Army, Navy and Air forces had taken their stations and begun their operations in almost every part of the world.
>
> - Isaiah Bowman, 1943[98]

Less than two months after Japanese officials signed an instrument of surrender in Tokyo Bay, the SSRC's Committee on Problems and Policy met to survey the "changed situation brought about by the war." A key topic of discussion was the accelerated "trend toward regional specialization." While the products of wartime regional work did not all match the "best research standards," important advances were made in the "compilation

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[96] National Research Council, with the Collaboration of Science Service, *Psychology for the Fighting Man* (New York and Washington: Penguin and The Infantry Journal, 1943), p. 10; Herman, *The Romance of American Psychology*, p. 22; Capshew, *Psychologists on the March*, pp. 97, 99.

[97] *Psychology for the Fighting Man*, pp. 24; Walter S. Hunter, "Psychology in the War," *American Psychologist* 1 (1946), pp. 479-492; the quote is from p. 479; Capshew, *Psychologists on the March*, p. 145.

[98] Isaiah Bowman, "A Department of Geography," *Science* 98.2556 (December 24, 1943), pp. 564-566; the quote is from p. 564. This piece was drawn from Bowman's annual report as President of Johns Hopkins University. For more on Bowman, Johns Hopkins, and geography, see Smith, *American Empire*.

and organized presentation of factual material." The publications singled out for praise included the JANIS books, Civil Affairs Handbooks, and OSS reports. Geography, as a result of this accumulation of resources, "advanced farther in this brief period of wartime research than it would have in fifty years of normal endeavor." It was not clear whether the meeting attendees were referring to a discipline or a form of understanding. But those from within Geography departments felt similarly – and invoked this new status, using war as an "independent variable," to advocate a strengthened presence for geographers within the academy.[99]

A post-war report of the National Research Council's Committee on Training and Standards in the Geographic Profession identified six fields where geographers made important contributions during the war: regional surveys, cartography, topographic models, map intelligence, place names, and administrative duties. But the same report identified six tasks fulfilled, inappropriately, by non-geographers, including considerations of terrain and water supply, climate and weather, port facilities, commodity studies, and major policy decisions (with the noted exception of Isaiah Bowman). Many of these deficiencies, interestingly, were later addressed by a coalescing quantitative geography. But as Preston James wrote immediately after the war, the readjustments required of geographers were not so much dependent on choosing a regional or topical course, but on finding ways to "fit with the work of other social scientists" and do so while maintaining a distinctive "geographic point of view."[100]

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[99] The SSRC Problems and Policy Minutes are in the bound volume, *Committee on World Regions, 1943*, pp. 60-61; Andrew Kirby, "What Did You Do in the War, Daddy?" in Anne Godlewska and Neil Smith, eds., *Geography and Empire* (Oxford: Blackwell, 1994), pp. 300-315.

[100] Preston E. James, "The Service of Geography in Government," in Wallace W. Atwood, ed., *The Clark Graduate School of Geography: Our First Twenty-Five Years* (Worcester: Clark University, 1946), pp. 47-52; the quotes are from p. 51. James was actually writing from Syracuse University.

In one of the few critical commentaries on academic geography and the Second World War, Andrew Kirby cites Owen Lattimore's observation that government service work was, for geographers and others, a seductive and corrupting enterprise, offering access to classified material, guaranteed funding, and an entrance (however small) into the halls of decision-making and influence. Like psychology and other social sciences, this was a type of experience that began during World War One, which prompted calls for an improved global geography, and led to an increased focus on *human* concerns. Scholars were thus, as Harvard's Derwent Whittlesey put it in a 1941 *Annals of the Association of American Geographers* editorial, "ready to speak and move promptly and to the point" at the advent of another conflict. Commentaries proliferated on the contributions "which the science of geography could make to the conduct of war and to subsequent reconstruction." A 1947 survey found that from 1942 to 1945, the American government employed two out of every five geographers who were members of the three national associations. Geographers traveled and resided in countries outside of the United States to an unprecedented degree and for various purposes, both covert and innocuous. According to one participant, "World War II was the best thing that has happened to geography since the birth of Strabo."[101]

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[101] Kirby, "What Did You Do in the War," p. 304; Derwent Whittlesey, "War, Peace, and Geography – An Editorial Foreword," *Annals of the Association of American Geographers* 31.2 (1941), pp. 77-82; the quote is from p. 79; Eugene Van Cleef, "Training for Geographic Research: A Symposium," *Annals of the Association of American Geographers* 34.4 (1944), pp. 181-182; the quote is from p. 181; Kirk H. Stone, "Geography's Wartime Service," *Annals of the Association of American Geographers* 69.1 (1979), pp. 89-96; the quote is from p. 89. See also Harris, "Geographers in the U.S. Government"; Edward A. Ackerman, "Geographic Training, Wartime Research, and Professional Objectives," *Annals of the Association of American Geographers* 35.4 (1945), pp. 121-143; George F. Deasy, "Training, Professional Work, and Military Experience of Geographers, 1942-1947," *The Professional Geographer* 6 (December 1947), pp. 1-14. The three groups were the American Society for Professional Geographers, the Association of American Geographers, and the National Council of Geography Teachers.

Washington, where many of these geographers were based temporarily, had become, according to a 1942 *Newsweek* piece, a "city of maps." The status of cartographic images as fashionable icons of knowledge and power had been solidified. Moreover, the importance of geographic representation and observation was seen as key to the production of a postwar peace and reaffirmed, for Stephen Jones, the "need for field work" to "look down the vistas that spread before political geographers" firsthand.[102]

The interlude spent by geographers in government agencies during the Second World War was, writes Kirby, "not a diversion: it helped redefine their subsequent intellectual positions." Many supported the trend of cooperative research that would bear directly on political problems, and foresaw the continued relevance of intelligence work and area specialization. But according to Edward Ackerman, among others, despite Geography's "unquestionably...wider recognition" in the United States as a result of the war, its practitioners had entered service positions with poor training, and they were unable to provide a useful "body of facts" to the war effort. Two deficiencies, in Ackerman's opinion, were particularly damning: the "inability to handle foreign languages, and lack of competence in topical or systematic subjects." Geography's regionalism, with individual exceptions, lacked international coverage, or *pattern*, as well as social scientific principles that sprang from and encouraged the collaborative work found, in certain of the best cases, at the OSS.[103] For Ackerman, geographers were not

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[102] The *Newsweek* article is quoted in Susan Schulten, *The Geographical Imagination in America, 1880-1950* (Chicago: University of Chicago Press, 2001), pp. 133, 228; Stephen B. Jones, "Field Geography and Postwar Political Problems," *The Geographical Review* 33 (1943), pp. 446-456; the quotes are from p. 446; J. B. Harley, "Maps, Knowledge, and Power," in his *The New Nature of Maps: Essays in the History of Cartography* (Baltimore: The Johns Hopkins University Press, 2001), pp. 52-81.

[103] Kirby, "What Did you Do in the War, Daddy?" p. 311; Hartshorne et al., "Lessons," p. 204; Ackerman, "Geographic Training," pp. 121-122, 127; Preston E. James, *All Possible Worlds: A History of*

worldly in either respect, and they had made the wrong choice by dividing regional and systematic methodologies and then overwhelmingly selecting the former as more suitable. At R&A, where Ackerman led the Geographic Reports section, and later moved to the Europe-Africa Division as Assistant Chief, the regional approach was not chosen because of its proximity to reality, but rather for its strict functional utility. There was little attempt to identify the variation between regions. Instead, it was suggested that the same forms of inquiry could be carried out within *any* region, and that this inquiry could be cumulative.

Ackerman was not willing to discard areal differentiation – this, he maintained, was the heart of geography as an intellectual subject. But he did find it ironic that despite the pre-war preoccupation with regions, the resulting scholarship could not provide "adequate data for wartime geographic research on few, if any parts of the world." This data, Ackerman suggested, covered such a "wide range of subjects" that "no matter how long we had worked," it could not have been gathered using older techniques but instead required the skills of "systematic specialists" who could more successfully attempt *correlation.* Those "technicians" whose skill with detail was offset by poor interpretative abilities should, like laboratory employees in physics or biology, be put to use on "mechanical work of the mind and eye." As with so many other contemporaneous writers, Ackerman believed that the globe as an object of investigation was too complex and interrelated for an individual regionalist. His concern was not really with the provision of data – the "place-specific information" which wartime geographers were

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Geographical Ideas (Indianapolis: The Odyssey Press, 1972), p. 451. As Ackerman noted (pp. 124-125), those publications identified as "systematic" before the Second World War had been composed by "amateurs," or were in physical geography, and those that did not fit in these two categories invariably focused on the United States only.

adept at providing – but with its detail and integration. In a vivid analogy that became popular after the war in the field of area studies, Ackerman likened regional geography to the medical study of one body-part, whereas analyzing "functional units" such as skeletal structure could lead to more profitable discoveries. This advice did not just apply to the special circumstances of war. Adopting the standards of rigor and interdisciplinarity held by intelligence agencies would improve all aspects of peacetime human geography, as would the abandonment of the idea that the world was a "mosaic of localities, districts and regions, with a potential student assigned to describing each tile." Geographers, in short, needed to measure up to the hardened social sciences, whereby a more thorough understanding of regions would become the ultimate *goal* of a unified systematic geography.[104]

There was a gendered implication to Ackerman's discussion of technicians. During the Second World War, in particular, these positions were typecast as mundane. They were then feminized and made ideal for the women who were entering the workforce in unprecedented numbers. As one commentator wrote,

> since our young men are being inducted into the armed forces at a very rapid rate, it appears that the opportunities for women with the geographic training should increase proportionately. I make this statement despite the fact that many senior geographers and administrators feel that there is little opportunity for women geographers.

F. Webster McBryde, who worked in the Geographic Branch of the War Department's Military Intelligence unit, recalled an interview with the editor of *Mademoiselle* for an

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[104] Ackerman, "Geographic Training," pp. 126-127, 129, 134; Harris, "Geographers in the U.S. Government," p. 249; Leonard S. Wilson, "Geographic Training for the Postwar World: A Proposal," *The Geographical Review* 38 (1948), pp. 575-589.

article on geography's wartime role, "especially in aspects of most interest and suitability to women, such as cartography and drafting."[105]

The most prominent geographers in the United States read Ackerman's important call for practical knowledge that could contribute to social and political problem-solving, and their responses form part of the next chapter. But his demand for additional systematic scholarship, so proximate to the rhetoric of early area studies, was not exclusive to geography. It was a predicament that swept across the social sciences at the end of the Second World War. And while much of the recent scholarship on this intellectual turmoil has focused on the 'laws' generated as part of the drive for systematicity, we would do well to consider the 'data' that Ackerman claimed was lacking in pre-war geography – data that would be used interpretatively by those seeking to formulate laws. This data, its collection, study and geopolitical character, was the basis for the regional intelligence of the Second World War and the Cold War.

Consider Robert Matthew's 1947 evaluation of the Army Specialized Training Program's area and language courses, which recognized the proliferation of regional knowledge – in the form of "language guides, pocket guides, war background studies, and the civil-affairs handbooks which were distributed in great numbers" – that had occurred since Pearl Harbor. The stressing of "little-known regions," the contemporary

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[105] Alden Cutshall, "The Geographer in War Time," *The Journal of Geography* 41.7 (1942), pp. 252-258; the quote is from p. 253; F. Webster McBryde, "Origin of the American Society for Professional Geographers: Take-Over and Cover-Up by AAG Number 1," in E. Willard Miller, ed., *The American Society for Professional Geographers: Papers Presented on the Occasion of the Fiftieth Anniversary of its Founding* (Washington: Association of American Geographers, April 1993), pp. 4-22; the quote is from p. 10. For important studies on this subject, but in other fields, see Jennifer Light, "When Computers Were Women," *Technology and Culture* 40.3 (1999), pp. 455-483; Naomi Oreskes, "*Laissez-Tomber*: Military Patronage and Women's Work in Mid-20th-Century Oceanography," *Historical Studies in the Physical and Biological Sciences* 30.2 (2000), pp. 373-392. Among the women geographers who arrived, and stayed, in Washington during the war was Evelyn L. Pruitt, who went on to work in the Geography Branch of the

focus, and the interdisciplinary methodologies found in these and other texts were all novel, bearing little resemblance to what counted as foreign-area programs before 1941. But in addition to an awareness of the language, culture or geography of a particular area, those who deserved the important title of regional experts in the post-war period would also be "subject-matter specialists," preferably in one of the relevant and authoritative social sciences. But Matthew was also clear on a "possible priorities arrangement" for post-war area studies in civilian institutions: it should begin with "the Slavs."[106]

Office of Naval Research, and was appointed Head in 1959. See Pruitt, "ONR's Geographic Research Program," *Naval Research Reviews* (April 1960), pp. 1-9.

[106] Matthew, *Language and Area Studies*, pp. 89, 150, 172-173; "Social Science Considerations in the Planning of Regional Specialization in Higher Education and Research," 3/10/44, RG 3.2, Series 900, Box 31, Folder 165, RF. Rockefeller was the only foundation active in "non-Western studies" before World War II, supporting Slavic, East Asian, Near Eastern, and Latin American studies, but the level of funding and the type of study were found wholly inadequate during the war. See George M. Beckmann, "The Role of the Foundations," *Annals of the American Academy of Political and Social Science* 365 (November 1964), pp. 12-22.

Chapter Three – Searching for Security in the Social Sciences

> At the *end* of this road of increasing frequency and specificity of the islands of theoretical knowledge lies the ideal state, scientifically speaking, where *most* actual operational hypotheses of empirical research are directly derived from a general system of theory. On any broad front, to my knowledge, only in physics has this state been attained in *any* science. *We* cannot expect to be anywhere nearly in sight of it. But it does not follow that, distant as we are from that goal, steps in that *direction* are futile. Quite the contrary, *any* real step in that direction is an advance. Only at this *end* point do the islands merge into a continental land mass.
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> - Talcott Parsons [1]

Introduction

By the end of the 1950s, the practice of partitioning the world into three parts was commonplace across a strikingly diverse range of disciplines, political perspectives, and even nations. The 'three worlds' framework was both novel and exceedingly primitive. More importantly, however, it was firmly anchored in the metageography of the Cold War and in simultaneous decolonization. Those who invoked a tripartite globe were keenly aware that the third, developing 'world' was the *object* of a political and economic competition between the first and second 'worlds'. In the United States, modernization theory was perhaps the most significant social scientific outgrowth of the Cold War's stark divisions. It mandated that in the titanic struggle between first and second worlds, with their equally generic characteristics of freedom and totalitarianism, the third world had to 'choose' the correct path between the first and second worlds. This adage, cherished by a host of influential social scientists, was so essential to American foreign policy that it could be used to advocate or justify the overthrow of unfavorable governments – or else cited as an example of a new American liberal pluralism. In this respect social scientists, with few exceptions, overwhelmingly

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[1] Talcott Parsons, "The Prospects of Sociological Theory," *American Sociological Review* 15.1 (1950), pp. 3-16; the quote is from p. 7, original emphases.

abandoned their typically caustic relationship with governmental interests during the 1940s and 1950s, continuing a trend which had begun with the patriotic contributions to the Second World War.[2]

According to the geopolitical logic of the post-war social sciences, 'America' formed the heart of the First World, the space whose non-ideological, scientific character distinguished it from the tainted technocracy of the Second World. Indeed, the communist bloc, "dangerous and inscrutable," was the primary motivation for the segmentation of the globe into three. Yet research on communist societies was not, as Carl Pletsch has claimed, awkwardly segregated from the rest of social science. The information gleaned from studies of the second and third world was quite "suitable to the formation or modification of general laws."[3] It was these forays into 'other' landscapes – under the logically interdisciplinary sign of area studies – that enabled the *globalization* of social science built first within a domestic environment. In the case of the 'cultural' Third World, that these expeditions were both intellectual and physical was important. The same could not be said about the study of the communist bloc, although intriguing efforts were made to compensate for the absence of local observation.

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[2] Carl E. Pletsch, "The Three Worlds, or the Division of Social Scientific Labor, Circa 1950-1975," *Comparative Studies in Society and History* 23.4 (1981), pp. 565-90; Leerom Medovoi, "Cold War American Culture as the Age of Three Worlds," *The Minnesota Review* 55-57 (2002), pp. 167-186; Martin Lewis and Kären E. Wigen, *The Myth of Continents: A Critique of Metageography* (Berkeley: University of California Press, 1997), pp. ix-x; Richard D. Lambert, "DoD, Social Science, and International Studies," *Annals of the American Academy of Political and Social Science* 502 (March 1989), pp. 94-107. Social science's smooth imaginative transition from the Second World War to the Cold War is apparent in the essays – and the title – of John C. Flanagan et al., *Current Trends: Psychology in the World Emergency* (Pittsburgh: University of Pittsburgh Press, 1952).

[3] Pletsch, "The Three Worlds," 582, 587; see also Peter Novick, *That Noble Dream: The "Objectivity Question" and the American Historical Profession* (Cambridge: Cambridge University Press, 1988), p. 293.

The strengthened reach of social science, however, retained a nationalist geography. Non-American (and primarily non-'Western') regions, or what Henry Kissinger called the "grey areas," were used, in colonial fashion, as laboratories for the testing of methods and theories originally conceived within the stable confines of the United States and its universities. These campuses were, as Bill Readings has reminded us, crucial institutions for the training of *national subjects*.[4] University area studies institutes, and the oversight agencies that funded them, were the seedbeds of modernization theory and related developments across the social sciences. At places such at MIT's Center for International Studies, a slightly more nuanced version of the three worlds framework was utilized, but still one that permitted a location to be summarized in a single descriptive word such as 'traditional'. And because the growth of American area studies was intimately tied to military and intelligence agencies, as well as politically prominent philanthropic foundations, the geographic knowledge produced by area studies is not appropriate to a desiccated intellectual history, but to a geopolitical genealogy.

Bruce Cumings has argued that despite the prominent role of state-centred economic and political power in the shaping of area scholarship, the most intriguing and complex effects of this power actually lie at the various intermediary locations where power is spread, filtered, and transported between more visible agencies.[5] This chapter

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[4] Henry A. Kissinger, "Military Policy and Defense of the 'Grey Areas'," *Foreign Affairs* 33.3 (1955), pp. 416-428; Bill Readings, *The University in Ruins* (Cambridge: Harvard University Press, 1996), p. 45; Vincente L. Rafael, "The Cultures of Area Studies in the United States," *Social Text* 41 (1994), pp. 91-112, especially pp. 94-95. Kissinger borrowed "grey areas" from Thomas K. Finletter, *Power and Policy: U.S. Foreign Policy and Military Power in the Hydrogen Age* (1954).

[5] Bruce Cumings, "Boundary Displacement: The State, the Foundations, and International and Area Studies During and After the Cold War," in his *Parallax Visions: Making Sense of American-East Asian Relations at the End of the Century* (Durham: Duke University Press, 1999), pp. 173-204. Earlier versions of this chapter appeared as Cumings, "Boundary Displacement: Area Studies and International Studies During and

moves through such sites of Cold War social science, setting down in laboratories, libraries, and boardrooms. But it is also concerned with the relationship between these places and the solidification of regional knowledge overwhelmingly initiated during the Second World War. Cold War considerations, of course, led to a concern with new sites and typologies. Equally, the ambitions of social scientists strained increasingly at the regional structures through which so much investment had been made.

Notwithstanding the claims that the Cold War was characterized by a distinctly thin spatial sensibility, it is, ironically, also the Cold War that permits a reconceptualization of the social sciences in a geopolitical light. I will examine the ways in which they contributed to the politicization of space, particularly in the form of those boundaries and hierarchies promoted by area studies. While the quest for universalism in social science sought to step past antiquated notions of geographic distinction, replacing these with a calculus that marginalized or denied the importance of geography, it led to mixed results. But the great strength of Cold War militarism was that it could be used to justify and even encourage these ambiguities.

In his 1949 book *Strategic Intelligence for American World Policy*, the OSS veteran and Yale historian Sherman Kent posed himself a question: should "the basic pattern of intelligence organization be regional or functional?" His answer was a compromise: the globe should be broken down into "four or five major geographical

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After the Cold War," in Christopher Simpson, ed., *Universities and Empire: Money and Politics in the Social Sciences During the Cold War* (New York: The New Press, 1998), pp. 159-188; and under the same title in the *Bulletin of Concerned Asian Scholars* 29.1 (1997), pp. 6-26. Unless otherwise noted, all citations will be to the version in *Parallax Visions*. Cumings rightly cites (p. 174) the Social Science Research Council as an example of those points where, as he puts it (quoting Michel Foucault), power "becomes capillary," but a more accurate example would be specific SSRC committees, as well as more temporary, interdisciplinary meetings of scholars, foundational officials, and military or intelligence representatives. He also incorrectly (p. 176) states that Herbert Marcuse was not "enlisted" in the Cold War

areas," and these areas divided further into smaller regions. Intelligence work, Kent argued, was overwhelmingly national or regional, as was the data flowing into agencies, or already available on file (from World War Two). But interdisciplinary efforts which prevented regional grids from becoming static were also essential; espionage, of course, did not often respect such boundaries. This chapter does not directly address the much-discussed early history of intelligence agencies such as the CIA. But it is concerned with the generation of intelligence – a cluster of geographical knowledge typically overlooked in conventional disciplinary histories – at precisely those area institutes that Kent believed would "produce exactly the kind of expert I have placed in my ideal...unit." Scholars of this variety, he went on, would simplify the "administrative problems of intelligence organizations," as certain classes of analysis could be farmed out and hidden behind a shroud of academic research.[6] These chains, as I will show, were pervasive and direct, but the Cold War and the social sciences were also intertwined in much more insidious ways.

The Aspirations of the Social Sciences

While undoubtedly dwarfed by the achievements of scientific research during World War II, social science was seen as a sphere of tremendous opportunity after the war. Methods used to develop radar or the atomic bomb could, it was believed, be deployed to reaffirm and understand "reason, security, and social peace under the umbrella of the United States." In contrast to the centralization of the physical sciences

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"struggle against the Soviet Union" – a claim I refuted, following Barry Katz and Douglas Kellner, in the previous chapter.

[6] Sherman Kent, *Strategic Intelligence for American World Policy* (Princeton: Princeton University Press, 1949), pp. 116, 119-121. CIA Director George Tenet dedicated the Sherman Kent School for Intelligence Analysis on May 4, 2000.

in Vannevar Bush's Office of Scientific Research and Development, however, social scientists were scattered across numerous government agencies. Despite this hindrance, historical accounts casting back to the years between 1945 and 1960 document "substantial advancement" in the social sciences, from numerous foundational publications and an "unprecedented volume of work" to an expansive generation of academics trained in the practices of research. Support that trickled in from a reluctant federal government (at least compared to the funding of national 'big science') was supplemented by the generosity of major philanthropic foundations. Money that did come from government was overwhelmingly provided from the military. One 1952 National Science Foundation report put this figure at 96 percent of the total. But these were not "one-way conduit[s] of influence." Some intellectual developments certainly propelled the acceptance of militarist discourse, funding, and worldviews, while others forged a much more hesitant relationship with Cold War constructions.[7]

Much of the history of post-war social science to the 1960s can be characterized as a collective attempt to pull theories and methodologies in line with the perceived successes of the physical sciences that were overwhelmingly tied to the military technologies of the Second World War. One result of this attempt at equalization (or basic respect) was a paradoxical blurring and reassertion of disciplinary boundaries. Projects, centres and grants were set up that endorsed cooperation, but inevitably

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[7] Christopher Simpson, "U.S. Mass Communication Research, Counterinsurgency, and Scientific 'Reality'," in William S. Solomon and Robert W. McChesney, eds., *Ruthless Criticism: New Perspectives in U.S. Communication History* (Minneapolis: University of Minnesota Press, 1993), pp. 313-348; the quote is from p. 325; Roger L. Geiger, "American Foundations and Academic Social Science, 1945-1960," *Minerva* 26.3 (1988), pp. 315-341; the quotes are from p. 315. See also his *Research and Relevant Knowledge: American Research Universities Since World War II* (New York: Oxford University Press, 1993). Ron Robin, *The Making of the Cold War Enemy: Culture and Politics in the Military-Industrial*

excluded one discipline or another, and more often than not Geography, as I will show, was among the ostracized. Interdisciplinary teams were seen as necessary in the face of an *increasingly complex* reality. Neither geopolitical nor intellectual isolationism was permissible. But the extension of scientific status could only proceed cautiously, after all, and thus it was best to begin with fields that had already begun to infiltrate the temple, such as economics and psychology, and with measured, verifiable empirical studies rather than theoretical flights of fancy. A hierarchy of the social sciences certainly existed, with scholars and approaches from the lower levels occasionally earning derision. But as the Parsons quote that opened this chapter indicates, it was more important to set each approach on the same general path.

The facts of behaviour were to be distinguished, epistemologically and methodologically, from the values that concerned the humanities. If necessary, values could also be disguised as facts through a language of objectivity and timeless national character. Another way to commence the scientization of social science carefully was to contain it within an area study initiative, in the process lending additional meaning to the demands for a 'mapping out' of the social sciences. Tellingly, these regional institutes frequently enforced stern rules of intellectual membership. Equally, however, the growing ignorance of disciplinary markers meant that every corner of the social sciences, and much of the humanities, was caught up to some degree in the project of legitimacy.

Within the multi-disciplinary net of the leading behavioural sciences (as they began to be called), and into cruder fields such as Geography, standardizing and "routinizing particularities" or phenomena was increasingly done through, and lent itself

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Complex (Princeton: Princeton University Press, 2001), p. 5; Michael S. Sherry, *In the Shadow of War: The United States Since the 1930s* (New Haven: Yale University Press, 1995).

to, quantitative methods. This was an approach signaled by the formation, in 1952, of the Social Science Research Council's joint Committee on the Mathematical Training of Social Scientists. Scientists such as the engineer and physicist Lloyd Berkner, a member of numerous Cold War initiatives and projects, demanded as late as 1960 that social science

> find elementary, fundamental, and independent concepts or parameters, whose coefficients can be determined numerically, and which combined in suitable mathematical formulations could predict analytically something about the ultimate capacities of the individual.

Whole, autonomous individuals were the favored units of study, and groups were merely aggregates of these soulless, clean humans. The body could thus be mapped in tandem with the nation – which could be simplified as a collection of "social facts, political publics, and economic markets," or characterized as backward or enlightened. The "trust in numbers" and the excuses of precision, verification, and testability trotted out in its defence were not Cold War novelties. Yet the period I am concerned with here was uniquely marked by pervasive aspirations to intellectual detachment, from economics to philosophy and literary criticism, which are often given the awkward catch-all label of 'positivism'.[8] *Rigorism* might be a more suitable term. But such ambitions, however radical or novel, were often complemented by conservative suspicions of change, uncertainty and social criticism, misgivings fitting nicely within a shield of supposed neutrality that could guard against charges of ideological depravity.[9]

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[8] Although important, and by no means distinct from the Cold War, economics does not figure prominently in this chapter. In part, this is due to reasons of length, and I do touch on both the comparative political economy of modernization theory and the economistic aspects of spatial science, but my decision is also due to the belief that economics, as the most 'successful' of the social sciences, was left with very little to say about the human geography of the Cold War world.

[9] Robin, *The Making of the Cold War Enemy*, pp. 6-7; Lloyd V. Berkner, "Can the Social Sciences Be Made Exact?" *Proceedings of the Institute of Radio Engineers* 48.8 (1960), pp. 1376-1380; the quote is from p. 1377; Jean Converse, *Survey Research in the United States: Roots and Emergence, 1890-1960*

A second condition provided additional spatial context: the argument that the triumphs of the sciences helped 'win the war' was a crucial contention for calculating social scientists, since it meant that any quest for universality had to be accompanied by a practical application (an awareness gained in the pre-war New Deal, as well). Representation had to be complemented by intervention, if in a less than fully reflexive form. The accompanying aversion to complexity and contradiction was justified by the organization of defence research – not just because of the questions that were asked, or the answers sought, but owing to a *security* problematic that demanded cultural and geographic certainty, and also encouraged hostile difference rather than similarity in the study of the "remote and the strange." In this sense the demon of cognitive 'relativism' was discarded while social and political discrepancy was not.[10]

To respond to the demand for utility, social scientists were forced to confront the peculiarly human aspects of their research. What was the meaning of a 'controlled experiment' in a world that seemed, more than ever, to lack certitude? Testing even the most modest statement did not require the abandonment of a laboratory sensibility, so it was argued, but rather a redefinition of what constituted a laboratory, as in the case of the Human Relations Area Files (HRAF). This task endorsed the creation of consistent tools

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(Berkeley: University of California Press, 1987), p. 1; Theodore Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton: Princeton University Pres, 1995); Carl E. Schorske, "The New Rigorism in the Human Sciences, 1940-1960," in Thomas Bender and Carl E. Schorske, eds., *American Academic Culture in Transformation: Fifty Years, Four Disciplines* (Princeton: Princeton University Press, 1997), pp. 309-329. Robin's contention (p. 6) that measuring was favoured over critique is thus correct, but it is also too general, placing 'critique' in a decidedly utopian light while ignoring the many ways that social science did not conform to accepted values or theories.

[10] See Ian Hacking, *Representing and Intervening: Introductory Topics in the Philosophy of Natural Science* (Cambridge: Cambridge University Press, 1983); Robin, *The Making of the Cold War Enemy*, p. 7. I say cognitive relativism because a quite different moral relativism was seen by humanists such as Archibald MacLeish to be precisely the *problem* with the detached objectivity of social science. While this contradiction is not to be ignored, it had little impact on most Cold War social science, which literally took morality for granted. Moreover, the "extent to which the two themes overlapped or coexisted peacefully

that would maintain certain levels of generalized authority and legibility under mobile conditions. Similarly, as a Rockefeller Foundation official put it, the worth of "relatively simple societies for the intensive study of specific problems" was substantial. This was one way of building up to the challenges of "modern societies."[11] But it was clear, given a backdrop of geopolitical antagonism, that the social scientists could ill afford to be preoccupied by the distinctions between of primitive versus modern spaces. Certain environments were simply more *strategic* than others, and the definition of 'scientific' was, in some instances, extremely malleable.

Although demands for advances in social engineering were common in the pre-war period, social science was seen as increasingly relevant after the Second World War precisely because of the uncertainty brought about by rapid technological and geopolitical change and the moral turbulence, cultural contact, and insecurity that accompanied these alterations in the fabric of modernity. A "revolution in our physical environment," wrote Rockefeller Foundation President Raymond Fosdick in 1946, was destabilizing the very foundations of the ground beneath human feet. Science had also created *problems* that were more than speculative. Social science might halt some of these, but it could not do so at the cost of 'progress', and its role was thus more one of management and adaptation – rationalizing the human factors that went into scientific research and application, observing the conditions of life, and promoting "orderly adjustment" in an atomic, administrative age.[12]

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was a sign of how conservative the liberal tradition became in times of national mobilization." Novick, *That Noble Dream*, p. 288.

[11] Leland C. Devinney, "Guideposts to RF's Research Program in the Social Sciences," June 4, 1948, in "Future Program in the Light of Reduced Budget," RG 3.1, Series 910, Box 3, Folder 18, Rockefeller Foundation Papers, Rockefeller Archive Center, Tarrytown, New York (hereafter RF).

[12] Donald Young and Paul Webbink, "Current Problems of Council Concern in Research Organization," *Items* 1.3 (1947), pp. 1-5; the quote is from p. 1; Wilbert E. Moore and Richard C. Snyder, "The

The emergence of 'organizational behaviour' as a distinct subject of theory and research was one obvious result, but the defining example of this reflexivity was the atomic bomb. Yet the "crisis" of a militarized world seemed, at times, to be even broader: the Rockefeller Foundation's Annual Report for 1945 stated plainly that humans were "discovering the right things but in the wrong order." It was inevitable that a Foundation staff member, Charles Fahs, would respond in a more grandiose, but no less expansive, tone:

> What is needed is nothing less than a new interpretation of human life and its universal environment which will be consistent with our latest knowledge in all fields of science, which will be sufficiently free from cultural bias to be acceptable internationally, and which will, at the same time, be emotionally appealing.... Certainly the progress made in astronomy, physics, biochemistry, psychiatry, and medicine is already sufficient to permit the sketching of a new picture of man's relations to the world about him, even though tremendous gaps still remain.[13]

In a speech to the American Association for the Advancement of Science in 1948, the sociologist Samuel Stouffer was more humble, but his goals were the same:

> by developing limited theories, testable and tested empirically, by being modest about them and tentative, we can, I think, make a small but effective contribution toward an ultimate science of society whose engineering applications will help regulate the complex civilization wrought by physical science and society.[14]

As I argued in the previous chapter, one of the most effective ways to 'limit' theory was to do so geographically. This spatial separatism also produced ideal opportunities to

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Conference on Theory of Organization," *Items* 6.4 (1952), pp. 41-45; James Capshew: *Psychologists on the March: Science, Practice, and Professional Identity in America, 1929-1969* (Cambridge: Cambridge University Press, 1999), p. 181; Sharon Ghamari-Tabrizi, "Simulating the Unthinkable: Gaming Future War in the 1950s and 1960s," *Social Studies of Science* 30.2 (2000), pp. 163-223.

[13] Charles Burton Fahs, "Comments on the Problem of Moral and Spiritual Welfare," November 10, 1947, RG 3.2, Series 900, Box 56, Folder 303, RF. This was one of many responses to a solicitation of comments on the question of "morals and ethics" in the face of an advancing, atheistic communism. Fahs was, at the time, Assistant Director of the Rockefeller Foundation's Division of Humanities. This division conducted much of the Foundation's work in area studies, with the exception of the groundbreaking support for programs at Columbia University. See "Social Sciences Program: Brief Review, 1939-1949, and Future Targets," Oral Report by Joseph H. Willits, Trustees Meeting, December 7, 1949, in RG 3.1, Series 910, Box 3, Folder 18, RF.

practice the regulatory aspects of social science that Stouffer propounded.

Asserting the scientific legitimacy of social science while maintaining distinctions between it and the 'physical' sciences was a difficult task constantly attempted during the early Cold War. Much of this discussion was characterized by equivocation. Two Social Science Research Council representatives, for instance, argued in a 1950 booklet on research for the federal services that while the preoccupation of the social sciences was "man, rather than the substances and forces that surround man or the lower orders of organic life," 'man' was still "subject to physical laws" that could presumably be clarified and inspected. Although a "nation, a community, a family, cannot readily be put in a test tube," this did not mean that the search for "uniformities of behavior" should be discarded. Such ruminations are not just characteristic of a particular period. They travel to the heart of much broader epistemological questions. What *is* extraordinary, however, are the examples selected by the same authors to illustrate "new approaches to the study of social behavior": they included the survey interview methods of the Office of Strategic Services; the community studies of the War Relocation Authority; the Human Relations Area Files; and the propaganda, psychological warfare (or 'psykewar'), and administrative procedures aided by culture and personality studies. That militarism was central to 'new' social science was almost a point of pride. During World War Two, many detached scholars had been "converted into social practitioners."[15] What was on display in such advertisements was not just a practical synchronicity, but also a

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[14] Quoted in Ellen Condliffe Lagemann, *The Politics of Knowledge: The Carnegie Corporation, Philanthropy, and Public Policy* (Middletown, CN: Wesleyan University Press, 1989), p. 142. Stouffer's speech was titled "Sociology and the Strategy of Social Science."

[15] *Effective Use of Social Science Research in the Federal Services* (New York: Russell Sage Foundation, 1950), pp. 7, 11, 12, 22, 24, 25, 27, 42. In the foreword, Donald Young, the Director of the Russell Sage Foundation, notes (p. 6) that the "manuscript was prepared...under the direction of Pendleton Herring and Paul Webbink of the Social Science Research Council."

discursive one. By distinguishing, and then entangling, the dialects of social science and political practice, entry to the realm of foreign policy was made more certain to the former.

During the Second World War Samuel Stouffer was the director of the Research Branch of the War Department's Information and Education Division. The military was an almost ideal organization for the testing of social scientific theories, and knowledge of 'the self' was just as important as the determination of an enemy. For Stouffer and dozens of colleagues, the massive and influential study *The American Soldier* was the result. Over 200 questionnaires were handed to more than a half-million soldiers, and the results of these tests, in addition to the study of "operational statistics," were compiled in a four-volume set of books. The Research Branch, Stouffer wrote, "existed to do a practical engineering job, not a scientific job," but in the softer light of the post-war period its work could be added to the cumulative achievements that were hastening "the development of a science of man." Initial results of the research were published in December 1942 as *What the Soldier Thinks*, and were used in the planning of the GI Bill and demobilization programs.[16] But the broader influence of *The American Soldier* was due to its balance of quantitative methods with regulatory recommendations.

Stouffer was a key member of Harvard's Department of Social Relations after the war, and continued to do contract research on leadership and behaviour for the military. The Social Science Research Council (SSRC) and the Carnegie Corporation generously funded his research for *The American Soldier* and other projects. Economists and

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[16] Samuel Stouffer et al, *The American Soldier, Volume I: Adjustment During Army Life* (Princeton: Princeton University Press, 1949), p. 5; Raymond V. Bowers, "The Military Establishment," in Paul F. Lazarsfeld, William H. Sewell, and Harold L. Wilinski, eds., *The Uses of Sociology* (New York: Basic Books, 1967), pp. 234-274; the quote is from p. 251.

psychologists were often quick to distinguish their craft from that of less meticulous inquiry, but the opposite challenge was also common, and some of the scholars charged with reviewing *The American Solider* questioned Stouffer's military sociology intensely. Nathan Glazer, for instance, wrote in *Commentary* that while Stouffer's aim was undoubtedly to "create sciences" on the model of physics, the result was "the mechanical and formal confining of knowledge, not the increase of it." Arthur Schlesinger, Jr. went further, denouncing the study as a "ponderous demonstration in Newspeak," and claimed, in his typically sexualized prose, that sociology had "whored after the natural sciences from the start." In a *New Republic* essay titled "The Science of Inhuman Relations," Robert Lynd claimed that the books depicted "science being used with great skill to sort out and control men for purposes not of their own willing." However much these critics clung to a model of pure science, their charges should not be dismissed. But in the influential hands of Paul Lazarsfeld and Robert Merton, and aided by a massive public relations campaign, *The American Solider* was redeemed as a model of social theory integrated with empirical, quantitative methods, a combination that eliminated "guesswork and conjecture." More importantly, it pioneered a brand of applied behavioural research that the military found quite useful (and funded handsomely), perhaps because of the same unquestioned support for techniques of human manipulation.[17]

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[17] On the funding of *The American Soldier*, see Series III, Subseries A, Box 327, Folder "Social Science Research Council – Analysis of Wartime Studies of Soldier Attitudes 1947-54", Carnegie Corporation of New York Archives, Columbia University Rare Book and Manuscript Library, New York (hereafter CCNY); Nathan Glazer, "'The American Soldier' as Science: Can Sociology Fulfil its Ambitions?" *Commentary* 8 (1949), pp. 487-496; the quotes are from pp. 489, 496; Arthur Schlesinger, Jr., "The Statistical Soldier," *Partisan Review* 16.8 (1949), pp. 852-856; the quotes are from p. 852, 854; Lagemann, *The Politics of Knowledge*, pp. 176-177; Robin, *The Making of the Cold War Enemy*, pp. 19-23; Mike F. Keen, *Stalking the Sociological Imagination: J. Edgar Hoover's FBI Surveillance of American Sociology* (Westport, CN: Greenwood Press, 1999), p. 157.

As new funding lines for military research solidified after the Second World War, social scientists latched on when possible. In 1947, the hugely influential National Security Act was passed. Among other novelties, the Act created a Research and Development Board (RDB) within the new Defense Department. The RDB was not wholly novel; it shared much, including the same first chair (Vannevar Bush), with the wartime Office of Scientific Research and Development. But unlike the OSRD, the RDB, though nearly as influential, did not distribute funds for research contracts, or supervise research. Although most RDB committees were scientific in character, a "Human Resources" panel addressed military research in the social sciences, including psychology. Chaired initially by Donald Marquis of the University of Michigan, the Committee on Human Resources included military and foundation representatives and many of the most prominent social scientists in the United States, scattered across a range of sub-panels. Attention was concentrated on four related areas: psychophysiology, personnel and training, manpower, and human relations and morale. Each of these was a central preoccupation for wartime and post-war social science, and each was linked into imperatives of strategic intelligence and psychological warfare. Similar fields were also the preoccupation of the Office of Naval Research (ONR) and several of the internal research centres established by the three services, from the Air Force's Human Resources Research Institute to the Army's Operations Research Office at Johns Hopkins University.[18]

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[18] Lyle H. Lanier, "The Psychological and Social Sciences in the National Military Establishment," *The American Psychologist* 4.5 (1949), pp. 127-147; the quotes are from pp. 130, 132. Lanier was Executive Director of the Committee on Human Resources in 1947-1948, and the Pentagon approved his piece for publication. Committee members or consultants included Charles Dollard and John Gardner of the Carnegie Corporation, Clyde Kluckhohn, Samuel Stouffer, Harold Lasswell, Hans Speier, and Kingsley Davis. Pendleton Herring of the Social Science Research Council attended meetings regularly, as did representatives from the CIA and the State Department. Raymond Bowers directed the Committee's

Foundations and the Relevance of Area Study

> Knowledge may not be power. But power wielded without knowledge may be suicidal. This, I take it, rather than knowledge for its own sake, is the raison d'être of "area studies."
>
> - Norman S. Buchanan, Associate Director, Social Sciences Division, Rockefeller Foundation, 1949[19]

In late 1952, writing for the Carnegie Corporation, William Marvel took stock of the explosion of area studies programs in the United States, arguing that the phenomenon was "closely related to the changed position of the United States in world affairs – as contrasted with the situation prior to World War II." Pre-war 'areas', Marvel went on, were sites explored and constructed by individual scholars, and a global conflict had turned these regions into "segment[s] of humanity" with a direct bearing on broad American interests. Marvel did not mention that these same cultural spaces were also, in many cases, battlegrounds. But following the conflict, and in the midst of a very different set of hostilities, all aspects of foreign cultures were now of potential significance. Apparently without an imperial history to prepare with, the United States was forced to improvise, in the form of language courses such as the Army Specialized Training Program.[20]

Marvel's laudatory sketch arrived at a precipitous time, as the Carnegie Corporation and its friendly rival, the Rockefeller Foundation, were on the verge of

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research staff. These are all names that reappear in the remainder of the chapter (and elsewhere in the dissertation). See Bowers, "The Military Establishment"; Charles T. O'Connell, *Social Structure and Science: Soviet Studies at Harvard* (PhD Thesis, Department of Sociology, UCLA, 1990), pp. 122, 342-343; Allan A. Needell, "'Truth is Our Weapon': Project TROY, Political Warfare, and Government-Academic Relations in the National Security State," *Diplomatic History* 17.3 (1993), pp. 399-420. On the ONR, see Harvey Sapolsky, *Science and the Navy: The History of the Office of Naval Research* (Princeton: Princeton University Press, 1990).

[19] Buchanan, "Notes on Policy and Program," July 7, 1949, in "Future Program in the Light of Reduced Budget," RG 3.1, Series 910, Box 3, Folder 18, RF.

[20] William Marvel, "The Carnegie Corporation and Foreign Area Studies Programs in the United States," 10/9/52, Series III, Subseries A, Box 42, Folder "Area Studies (to) 1961 (I)", CCNY.

eclipse at the hands of the upstart and staggeringly wealthy third member of the philanthropic 'big three', the Ford Foundation. After 1952, both Carnegie and Rockefeller support for area studies became more specialized, and each foundation turned largely to other pursuits. But the same two organizations – eminently qualified to serve as intermediaries between government interests and universities, and frequently operating through related bodies such as the Social Science Research Council – were centrally responsible for the maintenance of interest in area studies following the Second World War. By identifying appropriate funding lines, organizing interdisciplinary meetings of interested academics and, above all, contributing to discussions concerning the scholarly approaches that area studies scholarship should take with regard to the places under scrutiny, Carnegie and Rockefeller trustees, executives, and staff were undoubtedly crucial to the shaping of area studies as a Cold War *episteme*.

The identification of specific areas as strategically relevant was accompanied and reinforced by a belief that comprehensive and comparative study of "another society, nation, or cultural area" was also a "means of achieving a more profound and more valid grasp of the field of international relations." These were the 1958 words of John Gardner, President of the Carnegie Corporation between 1955 and 1967, and earlier, a Corporation Executive Associate who was crucial in the funding and promotion of a regional intellectual framework. In the winter of 1946-47, new to the Corporation, and working under sympathetic President Charles Dollard, Gardner conducted a review of Carnegie's area studies program, and concluded that few of the centers in operation, or even "in the planning stage," were adequately concerned with "possible contributions from the fields of social psychology, sociology and anthropology." Trained as a

psychologist, Gardner was personally affronted by this elision. In the summer of 1947, seeking suitable sites for over one million dollars in area studies funding, he corresponded with numerous scholars in these fields. And by the time he wrote the 1958 memo, the situation had been completely reversed.[21]

For Gardner, the end of World War II and the development of the Cold War only sharpened the perception that Americans of all stripes lacked an understanding of the world's strategic regions. This was not only an educational deficit, but also a profoundly practical, military problem. In a 1952 letter supporting the Human Relations Area Files to John W. Macmillan of the Office of Naval Research, Gardner could not have made these sentiments more clear. The globalization of militarism, in the form of the "concept of total war," had "produced an enormous increase in the *range* of information which must be brought under the category of intelligence." But it was not just the scope of Cold War intelligence that troubled him:

> If one encircles on the map those areas of the world in which we may have to carry on intensive military operations, one finds that many of these are areas in which we have a minimum of readily accessible information. Yet in most cases useful information exists. The problem is to dig it out, to sift it, and to put it in readily usable form.[22]

The triple predicament of research, organization, and classification, made acute by the general danger of missing knowledge, required scholarly "competence" such as that found at the HRAF's Yale home and various area studies institutes. From its conception in 1949, the HRAF had been explicitly designed for "universities which are interested in area-investigation and which are developing integrated social science

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[21] John Gardner, "Area Studies," January 23, 1958, in *Ibid*; John Gardner to Donald MacKinnon, June 6, 1947, Folder "Area Studies – Russian 1947-59," in *Ibid.* Gardner died in 2002, one of the most distinguished public intellectuals in the United States. In 1970 he founded Common Cause, a nonpartisan citizens' lobbying group that continues to advocate for open, accountable governance. For a web-based biographical treatment, see http://www.pbs.org/johngardner/.

research programs that require factual information from all over the world." The range cited by Gardner could be covered by the interdisciplinary staffs of these programs – fed by clearinghouses such as the HRAF – and made more manageable by a focus on a single region. After all, the very title Human Relations Area Files combined two "promising" routes to a potential "integrated science of behavior": social scientific theory, especially that which drew on the 'scientific' principles of physiology and psychology; and "the concentration of attention on a particular area or ethnic group by scientists of different disciplines." The 'files' were the physical units of data that permitted *both* regional examination and testing of hypotheses.[23]

In a rare published statement alluding to his work at the Carnegie Corporation, Gardner used a specific, profoundly geopolitical case from the Second World War to illustrate the value of social scientific proficiency under conditions of modern combat: the bombing of German targets. Before such operations could be launched, alternatives had to be weighed, which required the collection and sorting of large amounts of information, from studies of industry and transportation to speculations on morale and character. Once sufficient data had been gathered, vulnerability could be estimated, and targets could be selected. But the key was Gardner's assertion that the demands of *post-war* international relations were no different from this use of area information and expertise during an intensive military campaign.[24]

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[22] John Gardner to John W. Macmillan, February 5, 1952, Series III, Subseries A, Box 174, Folder "Human Relations Area Files", CCNY.

[23] "History of the Beginnings of Human Relations Area Files," October 1949, in *Ibid*; Clellan S. Ford, *Human Relations Area Files: 1949-1969, A Twenty-Year Report* (New Haven: Human Relations Area Files, Inc., 1970), p. 12.

[24] John W. Gardner, "Are We Doing Our Homework in Foreign Affairs?" *The Yale Review* 37.3 (1948), pp. 400-408. For more on urban targeting, see Chapter Five.

The initial grants of the Carnegie Corporation to area studies centers were part of a larger funding initiative on global knowledge, one that included support for related work in strategic studies. As the Corporation's 1946 Annual Report stated, assistance was necessary to make "this country more literate and more emotionally mature in international affairs." Given that military funds appeared to be available for the physical sciences, the officers of the Corporation saw a need for the support of both national heritage and the principles of "a sound and stable society." By the following year, grants in this sector had tripled in value, and "the extensive study of geographic areas," as part of the international affairs scheme, was "a particular object of invigoration." The double concern with stability at home and awareness abroad was, then, one and the same, part of a package that featured a known, orderly world with a liberal America in a position of dominant leadership. The window of opportunity for development of the social sciences only existed in the terms of practicality, which lent an importance to instrumental, interdisciplinary human questions of behaviour, social relations, and communications.[25]

For both the Carnegie and Rockefeller philanthropies, the elitist concern with 'adult' thought on matters of foreign policy was brought to the fore during the Second World War. By deliberately subsidizing groups such as the Council on Foreign Relations (closely aligned during the war with the State Department) and the Foreign Policy Association, the foundations targeted a range of professionals overwhelmingly devoted to the cause of American globalism. This internationalist perspective was invariably accompanied by tough masculinist realism, built on the blocks of national security, forceful military strategy, and a stable balance of power – precisely the mature stance

[25] Carnegie Corporation of New York, *Annual Report, 1946*, CCNY, pp. 22, 26-28; *Annual Report, 1947*, CCNY, pp. 28, 31. Unlike geographic areas, Geography rarely figured in these discussions of the social

applauded by Carnegie officials. In Gramscian terms, while encouraging intellectual innovation, foundation officials were also determined to maintain an existing order of authority, preferably through 'leadership' rather than blunt coercion. A concern for stability, gate-keeping, and moderation, of course, not only sat well with liberalism at home and abroad during the early Cold War, but with the concurrent strength of similar academic doctrines, such as structural-functional sociology.[26]

As the Second World War ended, foundation officials began to put together principles for sound post-war programs in the social sciences. At Carnegie, the decision was made to transfer support from established, successful projects to those in their initial stages. In addition to direct grants, both the Carnegie and Rockefeller philanthropies also began to funnel significant sums through the Social Science Research Council, mostly for the 'hands-on' aspects of area research, from conferences and travel stipends to graduate fellowships. These initiatives, run out of the SSRC's Committee on World Area Research, were part of the attempt by philanthropies to supplement immediate forms of area study with a base of more considered scholarship.

Foundations, Rockefeller's Norman Buchanan argued, were not in the business of competing with the CIA or the *New York Times* by supporting the "compilation and dissemination of area intelligence of an ephemeral or current events character." But this was a flawed distinction. It was the tremendous volume of publications built up during

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sciences.

[26] Inderjeet Parmar, "The Carnegie Corporation and the Mobilisation of Opinion in the United States' Rise to Globalism, 1939-1945," *Minerva* 37 (1999), pp. 355-378; Parmar, "'To Relate Knowledge and Action': The Impact of the Rockefeller Foundation on Foreign Policy Thinking During America's Rise to Globalism, 1939-1945," *Minerva* 40.3 (2002), 235-263; Edward H. Berman, "The Foundations Define a Field: Foreign Area Studies, Social Science, and Developmental Theory," in his *The Ideology of Philanthropy: The Influence of the Carnegie, Ford, and Rockefeller Foundations on American Foreign Policy* (Albany: State University of New York Press, 1983), pp. 99-125. Among the books produced out of

the war that would be evaluated more thoroughly, and one explicit impulse for widespread graduate training was to educate future intelligence workers – not just academic researchers. This was not just a question of 'manpower', but also one of epistemology. For the anthropologist Julian Steward, writing under SSRC contract in 1950, just as nascent intelligence agencies such as the CIA were obsessed with *prediction*, the needs of area studies were "better served by better science," which would similarly reduce uncertainty, in the ultimate hope that Americans might "understand the nations in foreign areas so thoroughly that we could know what to expect of them." The only meaningful difference was that pure scientific research was conducted on a longer time scale, but that did not stop area institutes from being 'raided' by various arms of the government.[27]

At mid-century, the SSRC oversaw and selected members from seven professional American societies – in anthropology, economics, history, political science, psychology, sociology, and statistics.[28] The SSRC also published several of the most prominent surveys of area research in the immediate post-war period. University of

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Yale's Institute of International Studies during the war was Spykman's *America's Strategy in World Politics* (1942) (see Chapter One).

[27] Geiger, "American Foundations," p. 318; Joseph P. Casagrande and Elbridge Sibley, "Area Research Training Fellowships and Travel Grants for Area Research: An Epilogue," *Items* 7.4 (1953), pp. 37-42; Norman S. Buchanan, "Notes on Rockefeller Foundation Program in the Social Sciences," August 1955, RG 3.1, Series 910, Box 3, Folder 19, RF; Julian H. Steward, *Area Research: Theory and Practice* (New York: Social Science Research Council, 1950), p. xiii; William L. Langer, "Scholarship and the Intelligence Problem," *Proceedings of the American Philosophical Society* 92.1 (1948), pp. 43-45. A 1943 Committee on World Regions (which included the Berkeley geographer Carl Sauer and William Duncan Strong of the Ethnogeographic Board) and a Joint Exploratory Committee on World Area Research (1945-6) preceded the Committee on World Area Research. The area fellowships program ended in 1953, when a similar one from the Ford Foundation replaced it. The Committee on World Area Research was disbanded at the same time.

[28] An attempt to include the Association of American Geographers (AAG) in the SSRC was turned down, due to "what would constitute a basic reorganization" of the Council. See Pendleton Herring to Norton Ginsberg, September 23, 1964, Accession 2, Series 1, Subseries 39, Box 177, Folder 2006, Social Science Research Council Papers, Rockefeller Archive Center, Tarrytown, New York (hereafter SSRC). The Association of American Geographers, founded in 1904, was, intriguingly, chaperoned by the more

Michigan geographer and Japan specialist Robert Hall, the head of the Committee on World Area Research, wrote the first. Although published in 1947, it was based on travels to twenty-four American universities in the spring and summer of 1946. After summarizing the dearth of area experts in World War II and the resulting launch of centers for regional study, Hall explained, in familiar language, why the SSRC was so interested in these developments:

> Here was a possible means of bringing about cross-fertilization within the social science and of bridging the gaps between the social and the natural and the humanistic disciplines. Here might be a way of working toward the fundamental totality of all knowledge. Here might lie means by which research in the social sciences could be made more cumulative and comprehensive.[29]

Hall went on to spell out the multiple motivations for interest in area studies – from the "sterility" of disciplinary structures, which exposed "twilight zones and vales of ignorance," to the latent "provincialism" of work that passed as universal and the increased global role of the United States. Whatever the impulse, area studies carried a colonizing trait, challenging American boundaries even as it reinscribed them. The problem was that the swirling currents of enthusiasm for the area approach, as epitomized in wartime training programs, were "makeshift" and quite distant from models of liberal education or sustained scholarship. However haphazard, though, the instruction of soldiers did share one trait with Hall's expansive update of classical pedagogy: both aimed to span *space* as well as time. But the introduction of social science into this

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humanities-oriented American Council of Learned Societies. Herring did encourage more participation in SSRC affairs from geographers, and cited Richard Hartshorne's past work as an example.

[29] Robert B. Hall, *Area Studies: With Special Reference to their Implications for Research in the Social Sciences* (New York: Social Science Research Council, 1947), p. 2.

model meant that regardless of the area under consideration, knowledge would be contemporary and more precise.[30]

One of the most common rationales for regional research formations was the assertion of provincialism – the argument that universality in the social sciences and humanities was impossible unless the isolated "milieu of the North Atlantic" was abandoned. While nominally an admission to the prevalence of culture-bound Eurocentrism and a vote for liberal cosmopolitanism, it was also an affirmation of the West's distinctiveness. As Hall put it, "we need to know all other areas: we need the data of other areas to check our assumptions." It was never doubted that this "horizontal," fieldwork-intensive approach could result in intriguing reassessments of American civilization. Hall advocated the maintenance of cross-cultural study in graduate area programs, "especially between the particular area of study and the United States." But neither the cultural and geopolitical constitution of America nor the premise of civilizations was up for question. A shift to "unusual areas" was all that was required for balance.[31] And while key area studies texts occasionally suggested that work conducted by the inhabitants of particular regions might be a source of comparison, these foreign contacts were rarely given the recognition they deserved, and were invariably treated as informants, or research assistants. The field was much more often viewed as a

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[30] *Ibid.*, pp. 10, 16, 18. See also Lagemann, *The Politics of Knowledge*, p. 174; Rafael, "The Cultures of Area Studies in the United States." In the Preface to Hall's status report, Yale's Wendell Bennett, another Committee member and author of the Ethnogeographic Board's official history (see Chapter Two), explained that the Committee was formed after pleas from Ethnogeographic Board members to the Board's sponsoring Councils that "area problems be further investigated" (p. iii).

[31] Hall, *Area Studies*, pp. 24, 42, 49; see also "Social Science Considerations in the Planning of Regional Specialization in Higher Education and Research," 3/10/44, RG 3.2, Series 900, Box 31, Folder 165, RF; C. B. Fahs, "A Reexamination of Rockefeller Foundation Program in Area Studies," October 24, 1954, in *Ibid.*

laboratory, especially for graduate students, who could spend a requisite time inside this professionalized space and return to receive accreditation.[32]

The claim that area studies would bring the disciplines into contact with an intricate globe was filtered through a version of pluralism that leashed diversity to expert authority. A similar relationship of dependency characterized the relationship between area studies and conventional disciplinary formations. The latter would continue to dominate while being integrated and supplemented by the former. "An area program," Charles Fahs wrote in 1949, was "a focus for the practical application of methods and concepts in the established disciplines, not a substitute or an alternative to these disciplines." Whether on the campus or in a shrinking world of integrated yet autonomous nation-states or regions, differences could thus be both *systematized* and *segregated.* And in an exclusionary, distancing, and thoroughly powerful move, this uneasy relationship could be monitored by the invigorated social sciences whose aim was Hall's total knowledge. But grand theory was a distant objective, to be preceded by endless, patient observation and empirical methods.[33]

Robert Hall also contributed the Preface to Charles Wagley's report on a national "world areas" conference, organized by the SSRC, funded by the Carnegie Corporation,

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[32] For a case study that addresses these relationships, see Mary Hancock, "Unmaking the 'Great Tradition': Ethnography, National Culture and Area Studies," *Identities* 4.3-4 (1998), pp. 343-388. On the field as a laboratory in area studies, see Rafael, "The Cultures of Area Studies in the United States," p. 96. Rafael does not mention that fieldwork was essentially impossible in certain areas, including the Soviet Union, that were central to area studies, but his summary is exclusively, if implicitly, concerned with the 'third world', or those areas that *could* be wrapped within the pluralist discourses discussed below.

[33] Rafael, "The Cultures of Area Studies in the United States," pp. 91, 95-97; CBF [Charles B. Fahs], "Area Studies," June 19, 1949, RG 3.2, Series 900, Box 31, Folder 165, RF; Robin, *The Making of the Cold War Enemy*, p. 20. Rafael (p. 96) makes the provocative and, I think, accurate argument that a similar, contradictory approach was taken by the social sciences – often funded, again, by foundations such as Rockefeller and Carnegie – to the 'problems' of minority populations and the urban underclass, particularly with respect to African-Americans, in the United States during the 1940s and 1950s (and before and after, as well). Equally, more recent discussions of 'multiculturalism' – or at least its caricatured, unidirectional versions – bear traces of this 'equal but distinct from the majority' theme.

and held in the Men's Faculty Club of Columbia University in November 1947. Among the speakers recorded were the political scientist Pendleton Herring, who became President of the SSRC in 1948, and Harvard sociologist Talcott Parsons, at the peak of his prominence in American social science. Both "drew an analogy between area study and the science of medicine," in the sense that while there was "no single science of medicine," it was generally devoted to the "practical problems of the total human organism, to the whole man." This gesture to medicine was no coincidence. Parsons, who was affiliated with Harvard's Russian Research Center, had drawn on medical practice in another context for an example of social science's efficacy in the control of deviance and in the shaping of the post-war "national purpose." When extended beyond an American space, however, he believed that social anthropology and institutional sociology were essential to the grasp of "the total system of an area," but also to "understanding of the *differences* between societies." Herring added that any parochialism in the social sciences would quickly be revealed upon the application of certain theories to "alien cultures."[34] Paradoxically, then, integration was possible circuitously, by understanding regional divergence.

Neither Parsons nor Herring was directly equating social systems with biological organisms, although Parsons would many years later come much closer to doing so.

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[34] Charles Wagley, *Area Research and Training: A Conference Report on the Study of World Areas* (New York: Social Science Research Council, June 1948), pp. 3, 5-7; Steward, *Area Research*, p. 96; William Buxton, *Talcott Parsons and the Capitalist Nation-State: Political Sociology as a Strategic Vocation* (Toronto: University of Toronto Press, 1985), p. 116. Among the geographers in attendance at the Columbia conference were Richard Hartshorne and Preston James; Hartshorne wrote the report of the European panel, although Donald McKay of Harvard chaired it. The prominent panel on the Soviet Union, chaired by Philip Mosely, included Clyde Kluckhohn, Owen Lattimore, Geroid Robinson, and John Gardner. See Panel of the Soviet Union, "Report of the Panel on its Discussions, November 29, 1947," in Series III, Subseries A, Box 329, Folder "Social Science Research Council – National Conference on Study of World Areas", CCNY. On the paradox of integration and difference in area studies, see Julian Steward,

Rather, they were interested in the shared idea of the organizational whole. Yet the image of an area studies centre as a 'clinic' diagnosing and healing the ailments of a regional body is a provocative one, since the social sciences had, for several decades, been frequently drawn together, often in quantifiable form, with biological and medical fields as part of a "comprehensive explanatory and applied framework of social control," or social engineering. Just as this supertheoretical discourse of what Michel Foucault would later call bio-power was configured toward the body, it could also be transferred to a regional *population* differentiated by brute geography. In another venue, Herring was careful to stress that social science emphasized "analysis rather than force," understanding over manipulation, and that a greater "command of data" could lead to greater precision in policy.[35] But this was an unsustainable distinction, particularly in the case of military or intelligence research. Moreover, it is not the direct application of a separate 'power' that is of concern, but a more subtle influence over conditions of conduct and human potential.

Many of the typical statements concerning the search for "an objective science of man" are present in Wagley's synopsis. But given the conference's date, it is not surprising that attendees were also preoccupied with geopolitical matters. Apologetic yet enthused, Robert Hall noted that it was "perhaps fortunate for the continued development of area studies, if for nothing else, that our world has remained even after the war in a state of critical uncertainty." In his address, "Objectives of Area Study in Colleges,"

"An Editorial," *Social Science Research Council Area News Letter* 1 (March 1949), *Ibid.* Steward was developing arguments later presented in his *Area Research.*

[35] In addition to the discussion in Chapter Two, see Lily E. Kay, "Rethinking Institutions: Philanthropy as an Historiographic Problem of Knowledge and Power," *Minerva* 35 (1997), pp. 283-293; the quote is from p. 288; Robin, *The Making of the Cold War Enemy*, p. 6; Pendleton Herring, "The Social Sciences in Modern Society," *Items* 1.1 (1947), pp. 2-6; the quotes are from p. 2.

Pendleton Herring asserted that the knowledge generated by area studies, "while acute during wartime, can now be regarded as crucial for the post-war period."[36]

Like Gregory Bateson, Herring recognized the increased relevance of economic and psychological warfare – both part of a normalization of militarism that characterized the novel state of protracted competition with the Soviet Union and international communism. But Herring was more direct than many in his assessment of the Cold War role and responsibility of area studies. The enlarged understanding of the Soviet Union and other regions, he argued, was fundamental to "a cool and calculated execution of the Truman Doctrine or its equivalent." Once it was acknowledged that the "great population masses of the world are simultaneously in a state of unrest that is unparalleled," and that the United States and Soviet Union both faced outward towards these zones of disintegration and disorder, the true cast of the conflict became clear:

> The struggle, in other words, is rather a competition to win adherents friendly to the United States and more disposed to accept our values than to follow the course of Russian leadership.... To the extent that we are able to exert our influence upon these areas and win their adherence through our understanding of their problems and, in turn, through their understanding of our objectives, we shall be able to win out in our competition with the Soviets.[37]

Similar comments were made innumerable times during the entire sweep of the Cold War period. But Herring's were not only early; they were also made by an individual who, as President of SSRC, oversaw the Committees on Political Behavior and Comparative Politics where the 'third world' engagements he described were given shape under the guise of modernization theory. The post-war relationship between area

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[36] Wagley, *Area Research and Training*, p. 8; Pendleton Herring, "Objectives of Area Study in Colleges," paper presented at the Conference on the Study of World Areas, November 28, 1947, in Series III, Subseries A, Box 328, Folder "Social Science Research Council – Committee on World Area Research", CCNY, p. 3. At the time, Herring was affiliated with the Carnegie Corporation. In 1946 and 1947, he was the head of the UN's Atomic Energy Group, and, while at Harvard he was a member of SSRC's original Committee on World Regions.

researchers and militarism had been raised even earlier, in October 1945, at a meeting of the SSRC's Committee on Problems and Policy. There, Robert Hall "recognized the need for cooperation between scholars and government but advised against any official connection, in order to protect the position of the American scholar working abroad."[38] The focus on the researcher's safety, rather than ethical principles, indicates that Hall was not averse to *unofficial* links – exactly the secretive connections that haunted area studies.

The Committee on World Area Research held a second national conference in May 1950, again financed by the Carnegie Corporation, and again held in New York. Many of the attendees were also the same, and the roster was a veritable 'who's who' of Cold War social science – scholars, bureaucrats, and foundation employees who were not strangers to such gatherings, where "manly interdisciplinary camaraderie" was the tonic for the emasculation of disciplinary cells. Area studies had, by the turn of the decade, become a genuine academic vocation, as a 1951 SSRC survey by Wendell Bennett indicates.[39] But notwithstanding this growth, the 1950 post-conference report is only notable for its tone of heightened urgency – "areas deemed exotic and peripheral more than ever impinge upon our daily life" – and a continued shift away from European topics to Asian concerns. Several geographers present at the first conference, including Richard Hartshorne and Preston James, did not attend the second, and the peripheral status of the discipline in area studies was made clear by the comment that the

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[37] *Ibid.*, pp. 7-8.
[38] Problems and Policy Minutes, October 27, 1945, p. 61 in the bound volume *Committee on World Regions, 1943; Joint Exploratory Committee on World Area Research, 1945-1946; Committee on World Area Research, 1946-1953*, Accession 1, Series 1, Subseries 19, Box 229, Folder 1386, SSRC.
[39] George E. Taylor, "Notes on the Second Conference on the Study of World Areas," *Items* 4.3 (1950), pp. 29-32; Rafael, "The Cultures of Area Studies in the United States," p. 94; Wendell C. Bennett, *Area Studies in American Universities* (New York: Social Science Research Council, June 1951). Taylor was the conference chair; for more on his role at the University of Washington, see below.

contributions of geographers were "still largely of a reconnaissance role," immaturely concerned with facts and description.[40]

1950 also saw the publication of Julian Steward's substantial consideration of the theory and practice of area research, a SSRC *Bulletin* that drew upon his own experience in Puerto Rico and at the Smithsonian Institution. His meditation was an example of the SSRC's relentless appeal, in the first few years after the Second World War, for "clarification of current thinking" in the social sciences, a task that could be accomplished in the form of "systematic surveys."[41] Summarizing the objectives of regional study as practical knowledge provision, awareness of cultural relativity and wholeness, and the furthering of universal science, Steward went on to sift through the various meanings (and scales) of 'areas', from spaces of "world importance" to sub-national regions such as the American southeast. To his credit, he acknowledged, crucially, that the impetus for area programs rarely derived from scientific or cultural theories, but from geopolitical imperatives and institutional conditions. In some cases, such as the Soviet Union, seemingly non-political criteria could be belatedly made to fit a space isolated for its role in international affairs.[42] But an emphasis on culture was, nonetheless, rapidly becoming secondary, as more *functional* economic and ideological ties took precedence in the isolation of areas worthy of scholarly consideration.

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[40] Richard H. Heindel, *The Present Position of Foreign Area Studies in the United States: A Post-Conference Report* (New York: Committee on World Area Research, Social Science Research Council, 1950), pp. 1, 35. Heindel, Pendleton Herring wrote to the Rockefeller Foundation, "is an historian, but on the SS [social science] side," objectively qualified to deal with area studies in all respects. See "SSRC – Richard H. Heindel – 6/13/49," RG 1.1, Series 200(S), Box 403, Folder 4768, RF.

[41] A. T. Poffenberger, "The Work of the Social Science Research Council," *Items* 1.1 (1947), pp. 1-2; the quotes are from p. 1. *Items* was SSRC's in-house journal.

[42] Steward, *Area Research*, pp. 2, 7-9, 21-22. See also his (successful) "Request for Grant," March 23, 1948, RG 1.2, Series 200(S), Box 487, Folder 4169, RF; and "World Area Research Programs: Letter of Inquiry," February 16, 1949, Accession 1, Series 1, Subseries 19, Box 229, Folder 1386, SSRC.

Once "structural-functional" typologies such as value systems were introduced, Steward recognized, the definition of 'region' became "infinitely complex." The solution, at least as it emerged in the 1950s, was to naturalize or downplay the geographic divisions between areas and to concentrate on the array of structures and functions that occurred within. Despite the terminology redolent of dense, abstract Parsonian sociology, this prioritizing was also perfectly suited to Cold War concerns, since certain, pressing structures and functions were simply advanced to the forefront of research, and factors of control or even *survival*, so heavily stressed by Parsons, were brought to the fore. Parsons' own role with the Russian Research Center, a subject I will expand upon in the next section, crystallizes this claim. And as the sequence of scales was followed en route to the all-important destination of 'world areas', the applicability of certain forms of homogeneity diminished, while others, more suited to Cold War strategy, gained in relevance. As Steward wrote, the integration of national or world area studies was, in practice, "dictated by international relations, by the necessity of formulating United States foreign policy." But given the vast size of these regions, and the need, during and after the Second World War, for more detailed forms and sums of knowledge, interdisciplinary methods were certainly required to achieve "a total picture."[43] These methods were particularly prominent in the study of *the* strategic area of the Cold War.

The Applications of Social Science: Soviet Studies

[43] *Ibid.*, p. 55, 72; Minutes, First Meeting of the Joint Exploratory Committee on World Area Research, Washington, February 23, 1946, p. 76 of the bound volume *Committee on World Regions*, Accession 1, Series 1, Subseries 19, Box 229, Folder 1386, SSRC.

In 1947, the Carnegie Corporation gave an unprecedented sum of $740,000 to Harvard University for the support of a new Russian Research Center (RRC) under the direction of anthropologist Clyde Kluckhohn. The justification for this substantial grant, the Corporation's 1948 Annual Report explained, was the emergence of a new, *non-European* world power "which has its roots in a culture vastly different from ours." This very difference rendered the Soviet Union unfamiliar, and a challenge to those concerned with the projection of American might. It became "of utmost importance that we achieve systematic and full understanding of Russian culture and history, and of the habits, beliefs, motivations, fears and loyalties of the Russian people." But while the RRC would clearly "bring expert knowledge to the air of those officials who must conduct day-to-day negotiations with the Russians," an excitement accompanied any foreboding. Despite the most politically charged context possible, the expertise and resources of the RRC also promised "development of new facts and methods in the social sciences."[44]

Sovietology was the centerpiece of Cold War area studies, a substantial, multi-faceted enterprise on its own. In the late 1940s and 1950s, as Americans discovered a strange new foe, Soviet scholarship was a hobby, or a fervent obsession, for many of the most prominent intellectuals of the period. It was, by the standards of the social sciences, lavishly funded. Partly as a result, it became controversial. Intriguingly, attacks first arrived from conservatives concerned with the sums of money spent on pursuits that appeared dangerously proximate to communism itself. These campaigns, which lay at the heart of McCarthyism's assault on universities, claimed several victims, and certainly influenced the direction and tenor of some research. But they now appear to be feebly, if

[44] Carnegie Corporation of New York, *Annual Report, 1948*, CCNY, pp. 17-18, 20.

frighteningly, ironic, given the deep bonds forged between Sovietologists and those in government responsible for fighting a Cold War.

The earliest significant entry in the Russian aspect of area studies was not Harvard's Russian Research Center but Columbia's Russian Institute.[45] Although this centre opened its doors to students in September 1946, it existed as an idea as early as October 1943, when Geroid Robinson, a historian on leave in Washington, sent a letter to his home university predicting a post-war expansion of Russian studies that would correspond with "a change that is rapidly developing in the distribution of world power." Robinson, who led the USSR Division in the Research and Analysis Branch of the Office of Strategic Services, followed his missive with another that sketched a suitable program of teaching and research. Building but departing from earlier "European organizations for regional study," Robinson argued that the proposed Russian Institute at Columbia should implement a novel combination of geographic specificity, disciplinary integration, concrete and multiple ties back to the university at large, and a blending of the humanities and social sciences. The Rockefeller Foundation provided a five-year grant, a space was carved out within Columbia's new School of International Affairs, and five staff members, all (with one exception) fresh from substantial government service, were appointed in the fields of economics, law and government, international relations, history, and literature. Graduate students specialized in one of these fields inside and outside the Institute – a coupling of regional and functional "citizenship" that became the

[45] The Russian Institute continues to exist at Columbia, although since 1982 it has been called the W. Averell Harriman Institute for the Advanced Study of the Soviet Union. Among other roles, Harriman was ambassador to the Soviet Union during the Second World War, and President Truman's National Security Advisor.

hallmark of area studies.[46] In supporting Robinson's appeal the Columbia administration recognized his OSS experience. One committee report noted that he had "in fact been operating a Regional Institute on the Soviet Union," and had gained "a wholly new sense and concept of the multiple values of experience on concrete, practical problems and especially of group attack."[47]

The Institute's faculty members were also very active in the post-war promotion of area studies and Cold War social science, dominating the early roster of SSRC's Slavic Studies Committee (formed in 1948) and working with the RAND Corporation, for instance. In addition, from the outset the Institute's training mandate was a broad one. As Schuyler Wallace, the Head of the School of International Affairs, wrote in 1946, the purpose of the Institute was to prepare "regional specialists to do work of authority and influence in business, in finance, in journalism, [and] in various branches of government service," as well as in academic circles. This was no mere boast; the Institute's "national character" was proudly demonstrated by the presence of government officers, including Army, Navy, and State Department Foreign Service personnel, some

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[46] L. Gray Cowan, *A History of the School of International Affairs and Associated Area Institutes, Columbia University* (New York: Columbia University Press, 1954), pp. 44-46, 55. The relevant section was also published, in a modified version, as L. Gray Cowan and Geroid T. Robinson, *History of the Russian Institute, Columbia University, 1946-1953* (New York: Columbia University Press, 1954). Further funding, mostly for fellowships, was received from the Rockefeller Foundation and the Carnegie Corporation. Cowan (p. 47) also mentions the response of the Soviet Union to the formation of the Institute, including 1951 and 1952 Pravda articles describing a "hotbed of American slanderers, spies and diversionaries" and "arch reactionaries."

[47] "Report of the Committee on a School of International Affairs and Regional Studies," 14 February 1945, Accession 1.1, Series 200(S), Box 321, Folder 3820, RF. The School of International Affairs was founded in 1946, with Regional Institutes (Russian, East Asian, and European) as building blocks. But it also drew substantially from the Program of Training in International Administration, where Navy officers were training on area and language during the Second World War (see Chapter Two).

of whom went on to important positions in diplomacy and Soviet policy. Prominent visiting fellows, such as Herbert Marcuse, stopped in for regular guest lectures.[48]

The scholar appointed to the Russian Institute in international relations was Philip Mosely, who during the Second World War was chief of the State Department's Division of Territorial Studies. Mosely succeeded Geroid Robinson as Institute Director in early 1951, and continued to consult with the State and Justice Departments, the CIA, the Air Force and "several other federal agencies." Mosely repeatedly scheduled interviews for Russian Institute graduate students with the CIA, testified against the Communist Party of the United States before the Subversive Activities Control Board in 1953, and aided the Ford Foundation in a program of "country studies" that led directly to influential work in comparative politics and modernization theory.[49]

According to John Hazard, the Russian Institute professor in law and government, Geroid Robinson encouraged the formation of a competing centre at Harvard because he was concerned about a potential backlash against Columbia for its Soviet interests. Another account describes an inability at Columbia to "take care of the demand."[50] Both

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[48] "Slavic Studies," *Items* 2.4 (1948), p. 9; Wallace to Oliver C. Carmichael, 2 December 1946, Series III, Subseries A, Box 3, Folder "Columbia University 1946-1951", CCNY; Cowan and Robinson, *History of the Russian Institute*, p. 48; "The Russian Institute in New York – Excerpt from Trustees' Confidential Report," February 1, 1954, Accession 1.1, Series 200, Box 322, Folder 3827, RF. A Copy of this publication is in Folder "Columbia University – Russian Institute 1946-1957," Series III, Subseries A, Box 113, CCNY. In 1954 Director Philip Mosely estimated that 40 percent of Institute graduates had gone into government service; see "Interview," January 13, 1954, Accession 1.1, Series 200, Box 322, Folder 3827, RF.

[49] Cowan, *A History of the School*, pp. 45-47; "The Russian Institute in New York," RF, p. 15; Cumings, "Boundary Displacement," pp. 183-184. The CIA's funding of social science and other Cold War activities, of course, was typically done through front organizations, resulting in the participation of many unwitting scholars. For one interesting recollection dealing with the CIA's notorious MKULTRA human behaviour (or, more sensationally, 'mind-control') research, see Richard M. Stephenson, "The CIA and the Professor: A Personal Account," *American Sociologist* 13.3 (1978), pp. 128-133. On MKULTRA, the standard reference is John Marks, *The Search for the "Manchurian Candidate": The CIA and Mind Control* (New York: Times Books, 1979).

[50] John N. Hazard, *Recollections of a Pioneering Sociologist* (New York: Oceana Publications, 1987), p. 113; Joseph Willets, "Conversation with Geroid Robinson," January 30, 1947, Accession 1.1, Series 200(S), Box 321, Folder 3822 [mislabeled 3823], RF.

factors were probably influential, and Robinson found willing partners in Harvard's William Langer (formerly of the OSS, and at the time linked to the fledgling CIA) and Clyde Kluckhohn, as well as Charles Dollard and John Gardner of the Carnegie Corporation. During his 1947 investigation of area studies research, the latter found Russian research to be "in deplorable shape." In a contemporaneous discussion with Philip Mosely, Gardner grew excited when the lack of Russian Institute students in sociology, anthropology, and social psychology was mentioned. Gardner also consulted closely with Kluckhohn, the Harvard Center's first head, on the merit of certain faculty prospects. He did not comment on this role when he wrote in June 1948 that Kluckhohn had "done a brilliant job of gathering talent for the program at Harvard," and that the RRC would shortly "be the equal of the group at Columbia in terms of brains and ability." But in discussions with his Harvard contacts and others, Gardner emphasized that the research to be conducted at the proposed center should follow hard on the heels of George Kennan's recent 'X' article in *Foreign Affairs*, the wartime study of Japan, and the work of the OSS.[51]

In his conversation with Gardner, Philip Mosely mentioned that Russian studies lacked a "pattern of coordination for the country as a whole, and particularly between government and the academic world."[52] By supporting certain types of research, foundations such as the Carnegie Corporation could make steps towards this pattern. The Russian Institute's training of military and diplomatic personnel was one aspect of the

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[51] "Russian Studies," July 11, 1947, Series III, Subseries A, Box 42, Folder "Area Studies – Russian 1947-59", CCNY. The author of this document is not named, but it is almost certainly Gardner. See also "Record of Interview, JG [John Gardner] and Philip Mosely," June 2, 1947, Series III, Subseries A, Box 113, Folder "Columbia University – Russian Institute 1946-1957", CCNY; Gardner, "Review of Area Studies Grants," June 3, 1948, Series III, Subseries A, Box 42, Folder "Area Studies – 1961 (I)", CCNY, p. 2; Sigmund Diamond, *Compromised Campus: The Collaboration of Universities with the Intelligence Community, 1945-1955* (New York and Oxford: Oxford University Press, 1992), pp. 66-68.

relationship between government and academic Sovietology. But Mosely was clearly gesturing toward a deeper bond, and it was left to Harvard's Center, ostensibly a research institute, to forge it. As Sigmund Diamond observed in his landmark exhumation, "the interests of the intelligence agencies – the CIA and the State Department, in addition to the FBI – and those of Harvard were most likely to intersect at the Russian Research Center – and they did." From the beginning of operations in 1948, the results of research at the RRC were made available to these contacts before they were released to the public, and although the university as whole declined to conduct classified, or secret, research, the public versions of certain RRC publications were missing sections pertaining to the direct conduct of war, in its various forms, against the Soviet Union.[53]

The image of the RRC presented to a wider academic audience was "the study of Russian institutions and behavior in an effort to determine the mainsprings of the international actions and policy of the Soviet Union." By emphasizing interdisciplinary cooperation across fields "neglected" in Soviet studies – not coincidentally, those leading the charge toward social *science* – and inviting an array of visiting specialists (from Isaiah Berlin to Margaret Mead)[54] and graduate students into its seminars and projects, the Center was designed as a site where a "coherent whole" could be produced and have

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[52] "Record of Interview, JG and Philip Mosely," CCNY.

[53] "Russian Research Center, Harvard University: Report, 1948-49," Series III, Subseries A, Box 166, Folder "Harvard University – Russian Research Center, 1948-1949", CCNY; Diamond, *Compromised Campus,* pp. 50, 56, 65. O'Connell, *Social Structure and Science*, is a useful supplement to Diamond's book, although I will cite the latter when possible. See also *Ten-Year Report and Current Projects, 1948-1958* (Cambridge: Russian Research Center, Harvard University, January 1958).

[54] Mead, it will be recalled (see Chapter Two), was working on Office of Naval Research and RAND-supported projects on comparative culture and Soviet culture, respectively. On January 7, 1949, she presented her research at the RRC, where her "psycho-cultural approach" emphasizing child-rearing and swaddling, received a number of testy responses from attendees. See Minutes of Seminar Meetings (UAV 759.8), Box 1, Records of the Russian Research Center, Harvard University Archives (hereafter RRC). Berlin arrived in January 1949 – to the alarm of the FBI's Boston representative – and wrote to friends of the "positivist pedantry of American social science." Michael Ignatieff, *Isaiah Berlin: A Life* (Toronto: Viking, 1998), p. 190; Diamond, *Compromised Campus*, p. 57.

secondary repercussions for general questions of methodology, theory, and comparative study. As one of its researchers, Alex Inkeles, put it in 1951, the "primary task is not that of making our regional methods more adequate for the study of foreign societies, but of improving our conceptual tools and methodological equipment to make us more effective in the study of *any* society."[55]

The most intriguing and important research, however, was done in "social relations." Here, the issue of national character was a central concern. But since the 'natural' observations made possible by fieldwork were unavailable to researchers, refugees and former citizens of the Soviet Union became subjects of tremendous scholarly importance. The RRC's response was a vast, uniquely team-based Harvard Project on the Soviet Social System, dominated by an overwhelmingly male group of researchers with substantial intelligence experience, and organized with support from the Air Force's Human Resources Research Institute (HRRI). The Project used interviews (many in the Munich area) and questionnaires to capture the conditions of daily life in the Soviet Union. The "ultimate goal," as Clyde Kluckhohn wrote near the beginning of this initiative, was to build "a provisional working model of the Soviet Social System." To do so, "special scales" were formulated that adjusted for various types of distortion and cultural difference – with the assistance of quantitative sociologists at Columbia's Bureau of Applied Social Research (BASR), who were acknowledged for their "technical collaboration" in the Project's final report. In addition to interview transcripts, sources from earlier research – civil and military – were mixed into a vast pool of information.[56]

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[55] Alex Inkeles, "Understanding a Foreign Society: A Sociologist's View," *World Politics* 3.2 (1951), pp. 269-280; the quote is from p. 269.

[56] Clyde Kluckhohn, "Russian Research at Harvard," *World Politics* 1.2 (January 1949), pp. 266-271; the quotes are from p. 266; *Ten Year Report and Current Projects*, pp. 7, 58-59; Kluckhohn, "The Harvard

Although Kluckhohn described the Social System work as unclassified, at least one participant, Raymond Bauer, used materials from his fieldwork in Germany to write for a classified project at MIT's Center for International Studies; the Air Force also reviewed the manuscript of the most significant public report, deleted some names and references, and demanded the omission of any "assumption of peace." Two versions, in other words, were produced: one that was applicable to military planning, and one that presented a public image of academic objectivity.[57]

Established in 1949 within Air University, in Alabama's Maxwell Field, the HRRI came into its own during the Korean War, when its dual interests of strategic intelligence and psykewar took on added urgency. But those interested in such contentious subjects – essentially, target selection and *awareness* of targeted populations and their intricacies, but also the *results* of atomic targeting on humans (the "social fabric as a target") – lacked 'data' on the Soviet Union.[58] Soviet area studies provided one solution.

Social science such as that practiced and produced at the RRC was useful to the HRRI's strategic intelligence program in two mutually reinforcing respects: reports containing sociological and psychological data would be sharpened, but so would the

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Project on the Soviet Social System: Survey of Research Objectives," October 1, 1951, Folder UAV 759.451 [no Box], RRC, p. 1; O'Connell, *Social Structure and Science*, p. 455. Of the many publications based on the Soviet Social System project, two stand out: Raymond A. Bauer, Alex Inkeles, and Clyde Kluckhohn, *How the Soviet System Works: Cultural, Psychological, and Social Themes* (Cambridge: Harvard University Press, 1956), and Inkeles and Bauer, *The Soviet Citizen: Daily Life in a Totalitarian Society* (Cambridge: Harvard University Press, 1959). The former book was the final report mentioned above (the quote is from p. viii). Inkeles was a research analyst for the USSR divisions of both the OSS (1943-45) and its short-lived Department of State successor (1945-46).

[57] Diamond, *Compromised Campus*, pp. 62-63; O'Connell, *Social Structure and Science*, pp. 443-445, 457; Simpson, "U.S. Mass Communication Research," p. 340. *Strategic Psychological and Sociological Strengths and Vulnerabilities of the Soviet Social System* thus became *How the Soviet System Works.*

[58] O'Connell, *Social Structure and Science*, p. 353. One HRRI psykewar team based in Korea was responsible for John W. Riley and Wilbur L. Schramm, *The Reds Take a City; the Communist Occupation of Seoul, with Eyewitness Accounts* (New Brunswick, NJ: Rutgers University Press, 1951).

process of data collection. It was believed that these "two tasks can be accomplished concurrently." Improvements in intelligence methodology would accompany, and in turn improve, "human factors intelligence" so desired by the Air Force. The Russian Research Center would therefore contribute to both the *reconnaissance* and *research* operations that were at the heart of intelligence work, even if the former was done at a distance. As a supplement, the HRRI also contracted with Yale's Human Relations Area Files to create a "file of knowledge" on Siberian populations.[59] This file, HRRI intelligence staff believed, was flexible, and could be employed to create psychological warfare plans, intelligence reports, and manuals outlining proper and improper conduct with respect to certain social groups.

According to HRRI director Raymond Bowers, the Air Force was interested in Kluckhohn's "working model" because it could be subjected to "various strains and stresses." While this model was not mathematical, it did provide military planners – who repeatedly consulted RRC staff – with novel information that could be used in psychological warfare campaigns or, more ominously, in an atomic attack on the Soviet Union. Here the RRC's work dovetailed with that of the BASR at Columbia, where the sociologist and demographer Kingsley Davis was leading an HRRI-funded initiative on global urban data that would permit comparative urban study and data for the selection of air targets. But the "Urban Analysis Project" was only a component of BASR's affiliation with the Air Force. A related group, also headed by Davis, examined interview methodologies, and the result of these studies were provided to RRC staff

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[59] Report, Strategic Intelligence Directorate, Human Resources Research Institute, Air University, Maxwell Air Force Base, Alabama, 30 November 1951, in Box 24, Bureau of Applied Social Research Papers, Columbia Rare Book and Manuscript Library, New York (hereafter BASR); Kent, *Strategic Intelligence for American World Policy*, pp. 3-4.

setting out for Germany. The HRRI-RRC-BASR axis was undoubtedly one of the most intimate collaborations established during the Cold War across university, intelligence and military lines, not just in terms of institutional relationships but also in the *parity* of the aims and theories deployed or generated. It solidified a framework that lasted into the 1960s: military requirements were molded into "operable research designs." But this transformation process was mutual. However awkwardly, the results of the interviews were made to fit the Air Force's generous understanding of strategic intelligence – a kind of partisan basic research that was not directed to a particular mission plan, but remained spatially anchored.[60]

That the "Refugee Project" shared a title with Talcott Parsons' *The Social System* (1951) was no coincidence. Not only was Parsons a featured speaker at the 1947 Columbia conference that inaugurated the coordination of area studies, and heavily involved with the Russian Research Center, he was concurrently working toward a similar total model of society, and although his was less geographically dependent, it certainly took 'America' as its foundation. But Parsons was also able to make use of a beneficial counterpoint: he was one of the original members of the Center's Executive Committee, and he and Samuel Stouffer were frequent attendees at Center seminars. His Department of Social Relations at Harvard (where Stouffer ran the Laboratory of Social Relations) started almost concurrently with the RRC, and also with Carnegie money. Social Relations was a divisive creation, reflecting Parsons' grand, synthetic ambitions.

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[60] Bowers, "The Military Establishment," p. 239; Diamond, *Compromised Campus*, pp. 83-84; O'Connell, *Social Structure and Science*, pp. 332, 375. BASR also produced reports on the Voice of America and other propaganda broadcasts for the U. S. Information Agency; Siegfried Kracauer was among the contributors to these studies.

The intent of the Department was to seek the foundations of a synthesis that flowed beneath artificially divided disciplinary compounds.[61]

Parsons had responded favourably to John Gardner's initial inquiries concerning a meeting of behavioural science and Russian area studies at Harvard. And in the summer of 1948 Parsons traveled to Europe to lay the foundations for the interview project. Diamond devastatingly sums up his role:

> Parsons approved attaching universities to the intelligence apparatus of government – covertly; bringing persons accused of collaboration with the Nazis to the United States – covertly; using Harvard connections to influence government officials to ease their entry to the United States – covertly; breaking down the distinction between research and intelligence.[62]

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[61] Capshew, *Psychologists on the March*, p. 189; Peter Buck, "Adjusting to Military Life: The Social Sciences Go to War, 1941-1950," in Merritt Roe Smith, ed., *Military Enterprise and Technological Change: Perspectives on the American Experience* (Cambridge: The MIT Press, 1985), pp. 203-252; Minutes of Seminar Meetings (UAV 759.8), Box 1, RRC. Kluckhohn's "Comparative Study of Values in Five Cultures Project" (1949-55) at the Laboratory of Social Relations, a search for scientific, universal "moral norms," symbolized anthropology's turn away from the vestiges of relativism, and toward studies of political culture. See Novick, *That Noble Dream,* pp. 284-285.

[62] Diamond, *Compromised Campus*, p. 95; O'Connell, *Social Structure and Science*, pp. 169, 197. Diamond (p. 95) continues: "As late as 1974 [Parsons] was serving as [a] consultant to the CIA on the effects of the student rebellions of the 1960s and on the personality of potential CIA recruits." The most controversial Nazi employee partially recruited by Parsons was Nikolai (Nicholas) Poppe, who went from a fugitive from American authorities in December 1946 to a consultant for the State Department (in Washington under an assumed name) and Army Intelligence in 1949. Poppe, who worked under the Nazis for the notorious Wannsee Institute in Berlin, eventually moved to the University of Washington, where he spent the rest of his academic career at the Far Eastern and Russian Institute, run by George Taylor. UW was a site of precedent-setting anti-communist academic purges, and Taylor, who did not escape suspicion because of his association with Owen Lattimore and the Institute of Pacific Relations, collaborated with the FBI on campus. Taylor also established the Foreign Morale Analysis Division while working for the Office of War Information during the Second World War. See Cumings, "Boundary Displacement," p. 188, and the sanitized history of international studies at UW: Felicia J. Hecker, "International Studies at the University of Washington: The First Ninety Years," http://jsis.artsci.washington.edu/jackson/history.html (1999; accessed June 22, 2003). Hecker describes Lattimore as Taylor's "friend and advisor at Johns Hopkins"; while the latter was certainly the case, the friendship must have been tested when Taylor, along with Poppe and Karl Wittfogel, testified against Lattimore "in the McCarran inquisition." Poppe's background was not discussed in front of the House Un-American Affairs Committee, nor was Lattimore's role in blocking Poppe's visa until 1949, on the grounds of this same background. See Cumings, p., 189, and Robert P. Newman, *Owen Lattimore and the "Loss" of China* (Berkeley: University of California Press, 1992.

The recruitment of tainted Soviet specialists was part of a longer and larger initiative, including hundreds of scientists, called Project Paperclip, that aimed to monopolize the talents of German researchers – not just against the Soviet Union, but every other nation except Great Britain, who had an "allocation formula" arranged with the U. S. It was thus not entirely Cold War-driven, despite the convenient public justifications and anti-communist myopia of certain American participants. See John Gimbel, "Project Paperclip, German Scientists, American Policy, and the Cold War," *Diplomatic History* 14.3 (1990), pp.

All, especially the last, were true of the RRC as well. Parsons, who was dogged by the security investigations of the FBI's COINTELPRO (counter-intelligence program) *because* of his proximity to both intelligence circles and Soviet studies, was demonstrably an opponent of McCarthyism, which he saw as an ideological anomaly.[63] But Parsons, even more aggrieved by leftist radicalism, and an author of anti-materialistic scholarship that certainly influenced modernization theory, was hardly afraid to counter communism in controversial ways.

Universities, in Parsons' view, should be non-partisan and above the ideological fray, and scientific inquiry should be disinterested and aspire to universalism. A lengthy debate could be had on the severity of the Soviet Union's 'threat' to Western Europe during the late 1940s, but this is not the issue here. Parsons clearly believed that this threat was imminent, but more importantly, he understood his geopolitical vision to be *rational*, and thus singularly appropriate. The contextual aims of science studies compel critical scholars to chart the contexts of science, and to ground the pursuit of truth in the spaces of life and lifeworlds. It is thus doubly fair to describe Parsons' sociology as what William Buxton calls a "strategic vocation," an activist attempt to shape, or at least secure, a social and political 'reality' rather than merely describing it. Parsons, whose

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343-365; Christopher Simpson, *Blowback: America's Recruitment of Nazis and Its Effects on the Cold War* (New York: Weidenfeld and Nicolson, 1988).

[63] Buxton, *Talcott Parsons and the Capitalist Nation-State*, p. 151; Mike F. Keen, "No One Above Suspicion: Talcott Parsons Under Surveillance," *American Sociologist* 24.3/4 (1993), pp. 37-54. This piece is reprinted as a chapter in Keen, *Stalking the Sociological Imagination*, which also includes case studies of C. Wright Mills, William Ogburn, and Samuel Stouffer, among others. Including Parsons, this list, with the exception of Mills, demonstrates not only that the FBI collected information on very 'mainstream' individuals, but also that the connection of scholars to some variant of 'communism', past or present, personal or by association, was not difficult. A useful review of Keen's book by an anthropologist interested in similar subjects is David H. Price, "Spying on Radical Scholars," *Radical History Review* 79 (2001), pp. 169-172. The evidence on whether Parsons was an FBI informant is mixed, unlike that on William F. Buckley at Yale and Henry Kissinger at Harvard; see Diamond, *Compromised Campus*.

scholarly output was never more prodigious nor more influential than in the 1940s and 1950s, was an advocate of the *stability* provided by capitalist democracy as an ideal order. But his advocacy of a neutral, professional social science as a "progressive, rationalizing force" directly paralleled the narrowed field of Cold War expression. And because of his work for the Russian Research Center, it is possible to weave these two lines together.[64] It just so happened that the destabilizing forces present in American society, and threatening to impinge upon it further from the outside, were identifiable under the category 'national security'.

In books such as *Toward a General Theory of Action* (1951), produced with Carnegie Corporation support under the auspices of the Department of Social Relations, and edited with his University of Chicago colleague Edward Shils, Parsons set out to piece together a unified social science. It was this quest that led his intellectual antagonist C. Wright Mills to famously deconstruct Parsons' exemplary "Grand Theory," composed in dense, imprecise prose that required translation "into English," which even after conversion "would not be very impressive." Although Mills devastatingly skewered the Grand Theory *and* abstracted empiricism of Parsons, the preponderance of "high

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[64] Buxton, *Talcott Parsons and the Capitalist Nation-State*, pp. 119, 123; Eric B. Ross, "Cold Warriors Without Weapons," *Identities* 4.3-4 (1998), pp. 475-506; O'Connell, *Social Structure and Science*, pp. 226, 238, 483. The debate over Parsons' Cold War role, and his political orientations, heated up, interestingly, as the Cold War ended: for opposing views, see Jon Wiener, "Bringing Nazi Sympathizers to the U.S.: Talcott Parsons' Role," *The Nation* 248.9 (March 6, 1989), pp. 289, 306, 308-309; Jens K. Nielsen, "The Political Orientation of Talcott Parsons: The Second World War and its Aftermath," in Roland Robertson and Bryan S. Turner, eds., *Talcott Parsons: Theorist of Modernity* (London: SAGE, 1991), pp. 217-233. Wiener leans heavily on Simpson, *Blowback*, and O'Connell's graduate research that led to *Social Structure and Science*. Nielsen's defensive "attempt to discover the real Parsons behind the smokescreen of academic folklore and misinterpretation," on the other hand, was written before the publication of *Compromised Campus* and makes no mention of Diamond's work (some of which had already been published elsewhere). But Nielsen is correct to challenge the interpretation of Parsons as a uniformly 'conservative ' figure, if only in the sense that he was no more conservative than many prominent academic anti-communists – who would today be called 'liberal hawks', or 'realists'.

generalities" did not prevent others from borrowing Parsonian concepts to serve a social science that was substantially premised on observation, if of a particularly ruthless kind.[65]

As early as 1944, Geroid Robinson had written that what distinguished the Soviet Union was not only its uniqueness, but an exceptional integration of the "elements" that comprised this singularity, characteristics "of its life and thought" that combined to "form the Soviet unit of power and policy with which Americans must deal."[66] This view of the Cold War enemy, a perspective that coalesced around the single word *totalitarianism* (already inherited from another foe), became a powerful orthodoxy in America's elite institutions of higher education in the 1940s and 1950s, when Sovietology spawned dozens of programs and institutes in its name. The absorption and preservation of a rumor "transformed a speculative vision of the enemy into a powerful working hypothesis," one that could be put to work globally, according to a spatial taxonomy of good and evil. Cold War behaviouralism may have been ruthless by nature, but it was also marked by unchecked, militant ambition, a weakness for contemporary "cultural mores," and a trenchant distaste for arguments that were not linear. Led by political scientists – who conceived of Soviet politics as a unidirectional "imposition of brutal rule" – but sweeping, at the very least, both history and sociology within its ample corpus, those leading the booming field of Soviet studies ironically "committed an act of self-impoverishment." They denied adverse national influences while reasserting familiar axioms and marketing the weight and urgency of their scholarship to the CIA

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[65] C. Wright Mills, *The Sociological Imagination* (Oxford: Oxford University Press, 1959), pp. 27, 31; Talcott Parsons and Edward Shils, eds., *Toward a General Theory of Action* (Cambridge: Harvard University Press, 1952); Lagemann, *The Politics of Knowledge*, 169. As Lagemann (p. 170) notes, *Toward a General Theory of Action* was "controversial within the Department" as a result of its ambitions.
[66] Robinson, "The Russian Institute," 27 November 1944, Accession 1.1, Series 200(S), Box 321, Folder 3819, RF.

and the State Department. Ironically, this stultification occurred in large part during the mid-1950s, when Stalin's death (1953) signaled the beginnings of profound changes in the Soviet 'system'. Philip Mosely's "pattern of coordination" became increasingly crude, defied by only a few isolated rebels, at least until the mid-1960s.[67]

For obvious if bizarre reasons, the complex movement that came to be known as McCarthyism targeted students of the Soviet Union intensely. John Hazard of Columbia's Russian Institute, for instance, was forced to file an affidavit stating that he was not a Communist in order to receive a passport. He was also called before the House Un-American Affairs Committee. Such events undoubtedly frightened Sovietologists, particularly older scholars, and there was little refuge to be found in the arms of the foundations, which were targeted by various conservative congressional investigations, or within the confines prestigious universities such as Harvard, where the FBI was active. These contexts, and less personal constrictions, certainly discouraged critical reflection, and furthered the cause of quantification and similar methods. Nor was it easy, given the state of the Soviet Union in the early 1950s, to intervene directly against standardized narratives. But the pervasiveness of "pseudointerpretation" was also due to the norms and concerns of scholars invigorated by wartime service in the cause of national security, and the even stronger passions of the crusading ex-Communists or refugees from Communism who joined them. Some of these writers were driven by a commendable idealism, and a smaller group made lasting contributions to the field of Soviet studies.

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[67] Robin, *The Making of the Cold War Enemy*, pp. 4-5; Stephen F. Cohen, "Scholarly Missions: Sovietology as a Vocation," in his *Rethinking the Soviet Experience: Politics and History Since 1917* (New York: Oxford University Press, 1985), pp. 3-37; the quotes are from pp. 7, 10, 23, 25, 27-28; Novick, *That Noble Dream*, pp. 281-282. Cohen (p. 6) notes, with some respect, that the standard textbook for the totalitarian school was Merle Fainsod's influential and Russian Research Center-produced *How Russia Is Ruled* (1953). He also tellingly argues (p. 22, original emphasis) that the Whig interpretation of the Soviet

Rather than blindly impugn a substantial body of work for its politicization, we should do the opposite, and continually acknowledge this same partiality, while considering its implications.[68]

The FBI investigation of RRC employees included director Clyde Kluckhohn. An anthropologist who had worked extensively on Navaho culture, he also had a top-secret clearance as a result of his participation on the Department of Defense's Research and Development Board. In an FBI report uncovered by Sigmund Diamond, Kluckhohn's loyalty was confirmed; in the words of the Bureau's Boston representative, the

> State Department would communicate with him to suggest they were short in a certain aspect of Soviet activity. Kluckhohn would then suggest to a graduate student at the school that he might do a thesis on this particular problem, making no mention to him of the fact that the State Department was also interested. Subsequently the results of the individual research could be brought to the attention of the State Department.[69]

Communicating Modernity

> Insofar as we now have projects designed around the problems of individual countries, it is because we recognize that functional problems such as those of development of communications can be usefully studied only in the context of particular sets of political institutions, cultural patterns, and social practices...we take it as a major task to try to

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Union – a continuous descent into totalitarianism since 1917 – characteristic of Cold War Sovietology was not far removed from the teleological "interpretations offered by official *Stalinist* historiography."

[68] Cohen, "Scholarly Missions," pp. 6, 10-11, 17-18; on Hazard, see the material in Accession 1.1, Series 200, Box 322, Folder 3827, RF. Even before McCarthyism reached a fever pitch, OSS and State Department veteran – and Henry Wallace supporter – H. Stuart Hughes had been dropped from his position as Assistant Director of the Russian Research Center, probably due to pressures from Carnegie trustees; see Diamond, *Compromised Campus*, pp. 74-76; O'Connell, *Social Structure and Science*, pp. 115-118. Among the many studies of McCarthyism, the one closest to academic life is Ellen W. Schrecker, *No Ivory Tower: McCarthyism and the Universities* (New York and Oxford: Oxford University Press, 1986); on the investigation of foundations, see Diamond, *Compromised Campus*, and Mark Solovey, *The Politics of Intellectual Identity and American Social Science, 1945-1970* (PhD Thesis, Department of History, University of Wisconsin-Madison, 1996). On the most infamous example of area studies and McCarthyism, see Newman, *Owen Lattimore*.

[69] SAC (Special Agent in Charge) Boston to Director, August 17, 1951, quoted in Diamond, *Compromised Campus*, p. 59. Kluckhohn's cooperation may have been assured given that the FBI claimed to have information on him that, "if leaked, could have subjected [him] to humiliation." See *Ibid.* William Langer moved from the CIA to replace Kluckhohn as director in July 1954.

> find new ways of making social science knowledge more relevant to action in the international sphere.
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> - "The Center for International Studies: A Plan for the Future" (March 3, 1954)[70]

When the Ford Foundation entered the sphere of social science funding with a splash in the early 1950s, it did so with a program that was markedly similar to that of the other two major philanthropic foundations. A focus remained on large sets of *national* problems. Ford's major novelty was a formal initiative in the "behavioral sciences" (named so because of the potentially 'socialist' implications of 'social' science) that incorporated psychology, anthropology, and sociology in an attempt to further advance the scientific aspects of human study already confronted by Carnegie and Rockefeller schemes. The heavily quantitative analysis of observable actions, which led to testable models of political systems and their group or individual machinery, was a cautious reproach to alternate, 'radical' theories of power elites, most obviously the work of C. Wright Mills. Though not without successes, the Behavioral Science division's esoteric, ambitiously integrationist aims were not received well by Ford's conservative trustees, and it was terminated in 1957. But the slack had already been taken up by military and intelligence agencies.[71]

In political science, behaviouralism may have gained its greatest triumph in the field of domestic politics. The reaction to totalitarian menace led to an affirmation of

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[70] In AC 4 (Records, Office of the President, 1930-1958), Box 48, Folder 16, Institute Archives, Massachusetts Institute of Technology, Cambridge, MA (hereafter MIT), pp. 11, 13.

[71] *Report of the Study for the Ford Foundation on Policy and Program* (Detroit: The Ford Foundation, November 1949); Geiger, "American Foundations," pp. 326-328; Berman, "The Foundations Define a Field," p. 108; Peter J. Sybold, "The Ford Foundation and the Triumph of Behavioralism in American Political Science," in Robert F. Arnove, ed., *Philanthropy and Cultural Imperialism: The Foundations at Home and Abroad* (Boston: G.K. Hall & Co., 1980), pp. 269-303; Gene M. Lyons, *The Uneasy Partnership: Social Science and the Federal Government in the Twentieth Century* (New York: Russell Sage Foundation, 1969), pp. 278-279. Perhaps the most significant result of Ford's Behavioral Science experiment was the establishment of the Center for Advanced Study in the Behavioral Sciences in Palo Alto, California. It is also important to recall the Division was closed down just as the National Science

American institutions, backed by a "consensus school" of history and American Studies that posited a consistent national creed above petty European struggles over class and ideology. Wartime and post-war service to the state had made criticism of policy difficult. Moreover, the most vital American variety of thought, for Arthur Schlesinger Jr., was "empirical," the antithesis of innately flawed dogma. To be sure, Europe was hardly America's other, since a reinvigorated liberal curriculum in the humanities concurrently stressed the timeless values of Western civilization.[72]

The United States was perceived to be the torchbearer for these values, and its proximity to perfection meant that the failings of European politics and society were more likely to be avoided, or deflected to other spaces. Moreover, the 'consensus' label is largely a myth fashioned in hindsight that ignores the subversive elements of almost all those individuals who receive the designation, such as Richard Hofstadter, or the work of more radical scholars like the diplomatic historian William Appleman Williams. But the assertion that America was unique in its systemic shape resonated with scholars such as Harvard's Samuel Huntington who applied its tenets internationally and strategically as well, in discussions of political modernization and economic development that were consistently tied to the still-broader context of the Cold War.

Ford's Board of Overseas Training and Research followed the lead of Carnegie and Rockefeller initiatives, organizing conferences and disbursing fellowships, but on a vastly greater financial scale. Through numerous grants to the key disciplines of political

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Foundation began to institutionalize social science funding. See Otto N. Larson, *Milestones and Millstones: Social Science at the National Science Foundation* (New Brunswick, NJ: Transaction, 1992).

[72] Schorske, "The New Rigorism," pp. 317, 323; Schlesinger is quoted in Novick, *That Noble Dream*, p. 300; see also pp. 304, 311-313. The premise of a non-ideological American sphere was singularly important to the post-war period, as evidenced in publications such as Daniel Bell, *The End of Ideology: On the Exhaustion of Political Ideas in the Fifties* (Glencoe, IL: Free Press, 1960).

science, sociology, and economics, this funding stream, supplemented by the SSRC's prominent Committee on Comparative Politics, was explicitly designed to address instability and the dangers of Communist advance in the developing, or 'third' world. Established in 1954, the Committee on Comparative Politics was an outgrowth of another Council Committee, on Political Behavior. A conference at Princeton in late 1953 led directly to the formation of the new body, and Gabriel Almond, from the same university, became the first chair.

For Almond, the fact that he and his committee's members – who were largely younger scholars – worked on regions such as Southeast Asia, Africa, India, and China was a stand against conservativism. Their intention was to "bring foreign area studies up to 'state-of-the-art', encouraging scholars to delve into the political infrastructure of European and other foreign countries." The key to this upgrade was intense fieldwork in "laboratory" environments, followed by cross-cultural comparison that included, but moved past, the depthless anthropological indicators of the Human Relations Area Files. In hindsight, Almond's assertion of radicalism appears dubious. While the *location* of interest might have shifted, the methodologies of comparative politics remained Eurocentric, premised on a kind of categorical imperialism, and frequently justifying neo-colonial operations of a much more material type. Less contentious is the assessment that over the next fifteen years the Committee, its members, and their approach became intellectually hegemonic, especially through the "Studies in Political Development" book series. "From the beginning," MIT's Lucien Pye, another prominent committee member and one of Almond's most talented students, wrote in 1959, "the committee has sought...the means to differentiate political systems as *wholes*." This goal

was achieved by recourse to Parsonian sociology, to the identification of "certain universal functions of all political processes" or institutional structures.[73]

Fears of foreign volatility – from political unrest to tropical diseases – prompted further research on these practical aspects of the behavioural sciences, and policy was used to directly test hypotheses. Ford Foundation grants under this rubric were overwhelmingly directed to prominent institutions: Columbia, MIT, Harvard, Chicago, Stanford, Berkeley, Princeton, and Washington. The resulting modernization theory, perhaps best epitomized by Walt Rostow's influential *The Stages of Economic Growth: A Non-Communist Manifesto* (1960), held that "underdeveloped nations," threatened by the "blandishments and temptations of Communism," could instead be more suitably directed up through an arc of progress, whose terminus was a *complete* American modernity – a social structure whose needs for reform were minimal. This *development* could be achieved by instituting techniques of gradual, evolutionary economic change that would be run by a well-educated class of elites who shared certain values with their American patrons. Groups of these elites would, it was hoped, meld together to constitute a limited but global culture of singular faith to manage, militarily and politically, what Joseph Willets of the Rockefeller Foundation described, in 1949, as "the orderly evolution of the unindustrialized countries." Upsetting the already fraught

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[73] Gabriel A. Almond, "Research in Comparative Politics: Plans of a New Council Committee," *Items* 8.1 (1954), pp. 1-4; Almond, *Ventures in Political Science: Narratives and Reflections* (Boulder: Lynne Rienner, 2002), pp. 95, 99; Lucian W. Pye, "Political Modernization and Research on the Process of Political Socialization," *Items* 13.3 (1959), pp. 25-28; the quote is from p. 25, original emphasis. The first, and most influential, book in the "Political Development" series was Almond and James S. Coleman, eds., *The Politics of the Developing Areas* (Princeton: Princeton University Press, 1960). It was produced after a June 1959 conference on "political modernization" in Dobbs Ferry, New York. Almond, who had studied under Harold Lasswell in the 1930s, consulted for the Air University, the State Department, the Office of Naval Research, the RAND Corporation, the Air Force, and the White House's Psychological Strategy Board in the 1940s and 1950s. By 1968 he had, like many with similar backgrounds, severed his ties to

process of development was seen as profoundly destabilizing, and, for Samuel Huntington and others, was a potential rationale for military intervention to maintain stability. Such an outlook, obviously, shared much with earlier scholarship composed in the service of empire, such as colonial anthropology. Indeed, 'development' was an internationalized response to the crises that shook many empires in the mid-20th century, and many anthropologists trained in a cultural relativist tradition rushed to embrace Rostow's hierarchical evolutionism.[74]

I will leave the specific, and numerous, examples of the local consequences (which were by no means unidirectional) of the inclusive, statist, deterministic, and America-centric modernization framework to the many existing studies on the topic. This is a historical geography, moreover, that was just beginning to unfold at the end of the 1950s, especially in the landscapes of Southeast Asia.[75] Earlier in that decade, however, the quintessentially applied nature of modernization was already apparent – so much that it attracted a contradictory complement of theoretical approaches, from dialectical Marxism to symbolic interactionism. Even before he and his cohort of social

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government, his reputation secure. See Ido Oren, *Our Enemies and US: America's Rivalries and the Making of Political Science* (Ithaca: Cornell University Press, 2003), pp. 13, 152-153.

[74] George M. Beckmann, "The Role of the Foundations in Non-Western Studies," in Warren Weaver, ed., *U.S. Philanthropic Foundations: Their History, Structure, Management, and Record* (New York: Harper & Row, 1967), pp. 395-409; Berman, "The Foundations Define a Field," pp. 112-113, 119; W. W. Rostow, *The Stages of Economic Growth, a Non-Communist Manifesto* (Cambridge: Cambridge University Press, 1960), pp. 134, 142; Oren, *Our Enemies and US*; Eric Wakin, *Anthropology Goes to War: Professional Ethics and Counterinsurgency in Thailand* (Madison: Center for Southeast Asian Studies, University of Wisconsin, 1992); Frederick Cooper and Randall Packard, "Introduction," and James Ferguson, "Anthropology and its Evil Twin: "Development" in the Constitution of a Discipline," in Cooper and Packard, eds., *International Development and the Social Sciences: Essays on the History and Politics of Knowledge* (Berkeley: University of California Press, 1997), pp. 1-41, 150-175. "By the mid-1960s the Ford Foundation had allocated the staggering sum of $138 million to a limited number of universities for the training of foreign-area and international-affairs specialists" (Berman, p. 101).

[75] In addition to those works cited above, a recent study that provides a useful point of entry into this voluminous literature is Michael E. Latham, *Modernization as Ideology: American Social Science and "Nation Building" in the Kennedy Era* (Chapel Hill: The University of North Carolina Press, 2000); see also Robin, *The Making of the Cold War Enemy*, pp. 29-33; George Rosen, *Western Economists and*

scientists migrated into the Kennedy and Johnson administrations, Rostow was part of an academic program with exceptionally close ties to military and intelligence sources – just as counterinsurgency operations led by the CIA were a regular feature of the 1950s. At MIT's Center for International Studies (CENIS), Rostow, with the assistance of Philip Mosely and McGeorge Bundy, ran a "classified project" on the "dynamics of Soviet society" for the CIA. During the 1950s the CENIS was covered with CIA fingerprints. The CENIS Director from 1952 to 1969, Max Millikan, arrived directly from 'the Agency', where he had organized the Office of Research and Reports, which "wrote in-depth studies on geographic characteristics of foreign areas, especially on foreign economic developments in the USSR and China." But the MIT Center had its origins in a State Department exercise appropriately dubbed Project Troy, an interdisciplinary study group that brought together scientists, social scientists, and historians to study the role of communications in international affairs. More specifically, Troy participants were interested in "getting the truth behind the Iron Curtain."[76]

In a period of ostensible peace matched by 'total war', the promise of political and economic warfare was tantalizing, because it was believed to be enlightened and relatively bloodless. The consequences of this impression were felt most in the third

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Eastern Societies: Agents of Change in South Asia, 1950-1970 (Baltimore: The Johns Hopkins University Press, 1985).

[76] Christopher Simpson, *Science of Coercion: Communication Research and Psychological Warfare, 1945-1960* (New York: Oxford University Press, 1994), p. 68; Cumings, "Boundary Displacement," pp. 183, 190, 252 n.1; Ray S. Cline, *Secrets, Spies and Scholars: Blueprint of the Essential CIA* (Washington: Acropolis Books, 1976), p. 146; Needell, "'Truth is Our Weapon'," p. 400. The published version of Rostow's CIA work was *The Dynamics of Soviet Society* (1953). It was reissued in 1967 with an additional section on the Khrushchev era. Walt Rostow died in February of 2003, still controversial for his role in the formulation of Vietnam bombing doctrine. He and Max Millikan were both students of the economist and Cold Warrior Richard Bissell, whose career included stays at Yale, MIT, the OSS, the European Cooperation Administration (which operated the Marshall Plan), the Ford Foundation, and, most notoriously, the CIA. See Ross, "Cold Warriors Without Weapons," p. 489; Richard M. Bissell, with Jonathan E. Lewis and Frances T. Pudlo, *Reflections of a Cold Warrior: From Yalta to the Bay of Pigs* (New Haven: Yale University Press, 1996).

world, where rival programs escalated minor conflicts and subjected large groups to endless manipulation attempts. What is intriguing about psykewar is that it was as much a problem for historians and social scientists as it was for those interested in the technical aspects of broadcasting and propaganda. Troy was the first of the increasingly popular 'summer studies' to include the former. Convened in October 1950, with the enthusiastic backing of MIT President James Killian, the group met at the Institute's Lexington Field Station and journeyed to Washington to meet with Secretary of State Dean Acheson. Although Troy's final report cited the Marshall Plan and other economic initiatives as important precedents, it also called these measures "defensive," and recommended a more aggressive and comprehensive psykewar program that could use social science to identify and distinguish "target populations" in the Soviet Union, Europe, and China.[77]

Rostow's study of Soviet social dynamics, Harvard's interview project, and the establishment of a permanent institute for political warfare all directly followed Troy. The last was MIT's CENIS. Funded by the CIA and the Ford Foundation, through the 1950s it "was a place where a wide variety of academic specialists could come together in academic surroundings to participate full- or part-time in classified research and discussions." But as conceived by MIT administrators and Ford Foundation staff, the "ultimate aim" of the CENIS was "the production of an alternative to Marxism." The abandonment of academic freedom's tenets at MIT led to significant protests at the Institute in the 1960s, but not before a model of military-university cooperation had

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[77] Simpson, *Science of Coercion*, p. 8; Needell, "'Truth is Our Weapon'," pp. 409, 411. Needell points out that Troy led directly to the creation of the Psychological Strategy Board (PSB), which reported to the National Security Council and included representatives from the CIA and the Departments of State and Defense. On the PSB, see Edward P. Lilly, "The Psychological Strategy Board and its Predecessors: Foreign Policy Coordination, 1938-1953," in Gaetano L. Vincitorio, ed., *Studies in Modern History* (New York: St. John's University Press, 1968), pp. 337-382; and Robin, *The Making of the Cold War Enemy*, pp.

migrated from scientific laboratories into those of social science. Secrecy and classification restricted discussions regarding the influence of funding arrangements and intellectual methodologies on teaching and research. These concerns had been anticipated by some members of Troy, who were, as authorities on communications and propaganda, in a position to struggle with the contradictions of "democracy in a garrison," as one put it. But not surprisingly, calls for "simultaneous research on the impact of the Cold War on American society and on ways of mitigating its negative effects" went largely unanswered.[78]

Unlike the strategists who plotted an impending Armageddon, the behavioural science research conducted at the CENIS and related sites was also concerned with everyday, even banal, forms of conflict. Those intrigued by the psychological and sociological aspects of battle were pushed to the forefront of social scientific research during the Korean War, when all but the most fervent planners resisted talk of atomic applications. Teams of advisors from the Human Resources Research Institute and the RAND Corporation, using the premise of an enemy "operational code" of political decision-making, traveled to the Korean peninsula, where they found another formidable study set in the thousands of Chinese and Korean prisoners of war housed in United

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42-43. The Soviet Union also ran a "large and reasonably sophisticated psychological warfare campaign against the United States." See Simpson, *Science of Coercion*, p. 7.

[78] "The Nature and Objectives of the Center for International Studies," August 1953, in AC 4, Box 48, Folder 16, MIT; Needell, "'Truth is Our Weapon'," pp. 417, 419; Rosen, *Western Economists and Eastern Societies*, p. 28. Among the students caught up in the 'Cambridge complex' was the anthropologist Clifford Geertz, who began graduate studies in Harvard's "extraordinary" Department of Social Relations in 1950. He studied with and was influenced by Talcott Parsons (who was trying "to be the Newton of social science") and Clyde Kluckhohn, and conducted his doctoral research as part of the CENIS's Indonesia project. See Ross, "Cold Warriors Without Weapons," p. 488; and Richard Handler, "An Interview with Clifford Geertz," *Current Anthropology* 32.5 (1991), pp. 603-613; the quotes are from pp. 604, 607. In his memoirs, MIT President James Killian recalled the CENIS thusly: "the CIA funding was later to bring into question the freedom of the center's work, even though those of use who knew the individuals involved had complete confidence in their intellectual integrity. I shared in this [funding]

Nations compounds. This was 'historical' research, but it could also be used to provide intelligence to future psykewar campaigns which required data on target areas and their vulnerabilities.[79]

Another purveyor of psykewar advice was the Army's Special Operations Research Office (SORO), housed at American University in Washington, DC, and set up in 1957 to assist the Human Relations Area Files in the preparation of country studies. SORO went on to achieve infamy for its role in the disastrous Project Camelot during the 1960s, but in 1958 it also began to produce Psychological Operations Handbooks providing "appeals and symbols of tested persuasiveness for communicating messages to specific audiences in a given country." These audiences comprised various social groups – ethnic, economic, and geographic – who were understood to be differentially susceptible to certain messages and techniques, and diversely opinionated on the subject of American influence.[80] SORO, and its older relative, the Operations Research Office, were essentially attempting to provide *maps* of a region's communications networks – formal and informal – that identified locations of weakness to be exploited by American propaganda campaigns.

The crystallization of communication research into a distinct, if minor, academic field was directly attributable to government-funded work on psychological warfare and

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decision and came to regret it." James R. Killian Jr., *The Education of a College President: A Memoir* (Cambridge: The MIT Press, 1985), p. 67. The CENIS dissolved its ties to the CIA in 1965.

[79] Bowers, "The Military Establishment," p. 243-244; Robin, *The Making of the Cold War Enemy*, pp. 8-10; "Role of Intelligence, Research, and Analysis in Psychological Warfare," in William E. Daugherty, with Morris Janowitz, *A Psychological Warfare Casebook* (Baltimore: The Johns Hopkins University Press, 1958), pp. 425-430. No specific author was given for this chapter. But the contributors to the casebook included McGeorge Bundy, Merle Fainsod, Alex Inkeles, and Clyde Kluckhohn, all of Harvard; Daniel Lerner and Lucien Pye of MIT; and Alexander Leighton, then in Cornell's Sociology Department. "Operational code" is drawn from Nathan C. Leites, *The Operational Code of the Politburo* (New York: McGraw-Hill, 1951), a study prepared for the RAND Corporation.

[80] Bowers, "The Military Establishment," p. 246.

related subjects such as persuasion, surveys, and human behaviour. This study of political culture was a generation removed from Second World War work on national character, but was no less concerned with personality. Psychological warfare, according to one survey published for the Operations Research Office, was

> defined as the *planned* use of *propaganda* and *other actions* designed to influence the opinions, emotions, attitudes, and behavior of enemy, neutral, and foreign groups in such a way as to support the accomplishment of national aims and objectives.

The techniques of psykewar were applicable as much in periods of peace as they were in times of war, and because psykewar's methodologies dovetailed with those of advertising, a domestic national body was not immune either.[81] This was clearest in the novel field of disaster research.

Psychological warriors shared with colonial missionaries the goal of creating new, modern persons in an alien space, but the twentieth-century practitioners of imperial social science were not only devotees of a distant, technological approach; they were also concerned with molding humans en masse. This was a program of improvement that appealed to many leaders of newly independent countries as well, partly because much of the initiative could come from local bureaucrats, and not colonial administrators. For

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[81] Simpson, "U.S. Mass Communication Research," p. 315; Herman, *The Romance of American Psychology*, p. 143; Daugherty, with Janowitz, *A Psychological Warfare Casebook*, pp. 2-3, original emphasis. The Bureau of Applied Social Research grew out of Paul Lazarsfeld's Office of Radio Research, established at Princeton in 1937. In 1940 Lazarsfeld moved the Office with him to Columbia, where he and others were active in governmental research on communications. In 1944, the name was changed to the Bureau of Applied Social Research, reflecting its more general-purpose intentions, and Lazarsfeld's continuing interests in the mathematical determinants of human behaviour. Robert Merton joined Lazarsfeld at BASR. Given these interests, an Lazarsfeld's own refugee status, it was not surprising that the BASR attracted a number of Frankfurt School émigrés, including Leo Lowenthal, Siegfried Kracauer, and, somewhat more tangentially, Theodor Adorno. See Judith S. Barton, ed., *Guide to the Bureau of Applied Social Research* (New York: Clearwater, 1984); Allen Barton, "Paul Lazarsfeld and the Invention of the University Institute for Applied Social Research," in Burkhart Holzner and Jiri Nehnevajsa, eds., *Organizing for Social Research* (Cambridge, MA: Schenkman, 1982), pp. 17-83; Martin Jay, "Urban Flights: The Institute of Social Relations between Frankfurt and New York," in his *Force Fields: Between Intellectual History and Cultural Critique* (New York and London: Routledge, 1993), pp. 10-24.

modernization theorists, however, the threat of communism meant that young states had to be closely parented. As he expanded his BASR Urban Resources project to global proportions, Kingsley Davis also became a prominent figure in population control, and argued that demographic trends in underdeveloped countries, especially in areas of "nonwestern culture," made these nations vulnerable to Communism. The solution, for Davis and others, was controlled birth rates: the American nuclear family's role as a bulwark against subversive behaviour could be replicated in the third world.[82]

In a 1956 memo to MIT Chancellor and Provost Julius Stratton, Ithiel Pool argued that university research on the "human implications" of scientific problems was minimal in the United States and that applied institutions such as the RAND Corporation were shouldering this important burden. Heralding the rising relevance of game theory, organizational theory, and similar perspectives, Pool stated that at MIT, "the development of mathematical and other rigorous approaches tends to be infused by a continuing focus on the major issues of national importance."[83] The work of the CENIS symbolized a new form – perhaps the deadly terminus – of area studies, captured by the comparative, multi-regional, and activist character of the Center, as well as similar 'general' institutes at Harvard and Princeton, where area studies increasingly overlapped with strategic studies. The MIT Center combined the latest in social scientific theory with a kind of military anthropology in hostile environments, a geopolitical mixture that

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[82] Cooper and Packard, "Introduction," pp. 17-18; in the same volume, see also Frederick Cooper, "Modernizing Bureaucrats, Backward Africans, and the Development Concept," pp. 64-92, and John Sharpless, "Population Science, Private Foundations, and Development Aid: The Transformation of Demographic Knowledge in the United States, 1945-1965," pp. 176-200; Davis is quoted on pp. 191-192.
[83] Memo, Ithiel Pool to J. A. Stratton, "Reasons for the Development of the Behavioral Sciences at M.I.T.," March 1, 1956, AC 132 (Records of the Office of the Chancellor (Stratton) 1949-1957), Box 4, Folder "Center for International Studies," MIT, p. 4.

was a key intellectual component of the Cold War, but also a blend that was only deepening trends traceable to the Second World War.

Conclusion: Lost in Geometry

> Any specific operation of the Air Force is concerned with particular countries as regions of the world. A good working knowledge of the major differences among the different areas of the world is therefore essential to intelligent operation. Air Force officers will have an opportunity to see and be required to operate in many parts of the world. To make intelligent use of observations will require an understanding of the relationship of the various physical and cultural features.
>
> - Richard Hartshorne [84]

The survey research conducted at BASR and other similar institutes sought what Jean Converse calls the "large shapes of social geography, movements of populations, flows of information, opinion, and feeling." This definition, although perhaps without the opinion and feeling, is equally applicable to the spatial science that transformed geographical study beginning in the early 1950s. The imperative behind these changes was to move past historically and geographically limited theories and seek holistic understandings of the world that approximated those offered by science – apparently untethered from time and space, at least *methodologically*. Alternatives to this ambitious upstart certainly lingered, but were they, in comparison, poorly organized? With the use of a telling image, Carl Schorske, no aficionado of positivism, makes a similar argument concerning period philosophy:

> It would be too much to say that before the creation of the new, rigorous analytic schools that acquired salience in the 1950s, darkness lay on the face of the deep; however, the lights that hovered above it were many-hued and scattered, lacking the power to illuminate the terrain with strong, focused beams.[85]

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[84] Hartshorne is quoted in W. L. Baxter, "The Place and Problems of Geography Instruction at the Air Force Academy," *Journal of Geography* 59.9 (December 1960), pp. 411-415; the quote is from p. 412. No date is given for Hartshorne's statement, but it is likely from the late-1950s. Hartshorne is listed as a member of the Air Force Planning Board.

[85] Converse, *Survey Research in the United States*, p. 1; Schorske, "The New Rigorism," p. 311, 312.

Schorske's description is strikingly applicable to Cold War American Geography. That one source of these improved beams was the light of explosions illuminating darkened German and Japanese cities during Second World War bombing runs is not anecdotal speculation, but documented opinion. The iconoclastic geographer William Warntz, enlisting in the American Air Force during the Second World War, found the maps he had "always enjoyed" to have suddenly taken on "'life or death' aspects," and began to deduce spatial order from the vantage of his planes. His posting in Newfoundland led him to John Q. Stewart's *Coasts, Waves and Weather* (1945), a text composed for navigators that also triggered in Warntz a new scientific sensibility.[86]

The Second World War, according to Kirk Stone, had catapulted Geography into practical and international realms, which not only led to greater prestige, but also to improved coverage of the earth's surface. It additionally democratized the profession, as the elitist Association of American Geographers (AAG) was challenged by an alternative American Society for Professional Geographers (ASPG). The exclusivity of the AAG was exposed embarrassingly in wartime Washington, where non-members, mostly younger scholars, worked alongside and often outranked older, more established colleagues. The growth of Geography as a practical profession during and after the war meant that the elected system adopted by the AAG was no longer suitable, and the two organizations merged in 1948.[87]

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[86] William Warntz, "Trajectories and Co-Ordinates," in Mark Billinge, Derek Gregory, and R. L. Martin, eds., *Recollections of a Revolution: Geography as Spatial Science* (London: MacMillan, 1984), pp. 134-150; the quotes are from p. 140.

[87] Kirk H. Stone, "Geography's Wartime Service," *Annals of the Association of American Geographers* 69.1 (March 1979), pp. 89-96; on the ASPG, see E. Willard Miller, "A Short History of the American Society for Professional Geographers," *The Professional Geographer* 2.1 (1950), pp. 29-40.

The generational schism in Washington was also a methodological one. In one of the earliest ASPG missives, William Van Royen bemoaned the "agonizing detail" of "microchorography," which "in its search for minor facts...has often ignored major problems which are staring at us in the face." This was an entry into the discussion, widened substantially after the immediate demands of wartime employment had subsided, over the respective merits of regional and systematic approaches, and whether the two could be amalgamated. But the ASPG's *Bulletin* was also devoted substantially to the "practical applications of geography," including extended discussions of the discipline's role in defence work.[88]

In the previous chapter I discussed Edward Ackerman's strident call for a more scientific geography, an appeal that derived from his wartime experience with the Office of Strategic Services. Ackerman's challenge had particular relevance for the most prominent geographer at the OSS, Richard Hartshorne. Just before the United States entered the war, Hartshorne had published *The Nature of Geography*, a formalistic study surveying, as its subtitle indicated, "current thought in the light of the past." This landmark text, which has earned its own retrospective, later became a symbol of polemical desecration for those geographers who sought to fashion a geometrical world of patterns, laws, and order.[89] As Eugene Van Cleef wrote in a 1952 issue of *Science*, areal differentiation, or the description and interpretation of regional differences, was

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[88] Van Royen is quoted in E. Willard Miller, "The American Society for Professional Geographers: Goals and Objectives," in Miller, ed., *The American Society for Professional Geographers: Papers Presented on the Occasion of the Fiftieth Anniversary of its Founding* (Washington: Association of American Geographers, April 1993), pp. 22-39; the quotes are from pp. 24, 27; Paul A. Siple et al., "Symposium on Geographers in the National Defense Program," *The Professional Geographer* 7 (1948), pp. 1-41. The *Bulletin* was later expanded into *The Professional Geographer*.

[89] Originally intended to be a study of European boundaries, Hartshorne arrived in Europe to work as national borders were collapsing, and shifted his concern to intellectual certainties. I thank Derek Gregory for emphasizing this point.

"untenable if it is not based upon certain fundamental and established principles, which may be utilized as standards of reference." Although he recognized that geographers, unlike physicists, did not always enjoy the benefits of a controlled laboratory, Van Cleef argued that with a "vast number of observations in which similar conditions occur, we may be able to generalize," producing a true science of Geography. Statistical methods, Preston James later wrote innocuously, "offer the equivalent of a geographic laboratory."[90] This was an unwittingly prescient comment. Not only did it indicate the growing importance of computers in 1950s social science, but it also suggested that the great illusion of this work was the simulation of scientific conditions in computers and their mobile outputs, effectively eliminating human influence altogether.

It should be apparent that Van Cleef's comments bear a striking resemblance to wider debates in social science that used Cold War areas and geopolitical divisions as anchors for the pursuit of laws and uniformities. The same, I think, can be said for Geography's 'quantitative revolution'. The internal outlines of this episode have their share of raconteurs, and I do not wish to travel the same paradigmatic paths, or reify the same masculine protagonists as decisively divergent. As Ackerman and others since have argued, in *The Nature of Geography*, and more importantly, in his work with the OSS, Hartshorne was by no means opposed to inquiry that fell under the labels systematic, scientific, or objective. The Research and Analysis Branch of the OSS,

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[90] Richard Hartshorne, *The Nature of Geography; A Critical Survey of Current Thought in the Light of the Past* (Lancaster, PA: The Association of American Geographers, 1939); J. Nicholas Entrikin and Stanley D. Brunn, eds., *Reflections on Richard Hartshorne's The Nature of Geography* (Washington: Association of American Geographers, 1989); David N. Livingstone, "Statistics Don't Bleed: Quantification and its Detractors," in his *The Geographical Tradition: Essays in the History of a Contested Enterprise* (Oxford: Blackwell, 1991), pp. 304-346; Eugene Van Cleef, "Areal Differentiation and the 'Science' of Geography," *Science* 155 (June 13, 1952), pp. 654-655; the quotes are from p. 654; Preston E. James, *All Possible Worlds: A History of Geographical Ideas* (Indianapolis: The Odyssey Press, 1972), p. 500. See also

where Hartshorne carried significant weight and took his work quite seriously, was the site of extensive collaborative, 'fact'-based work. In addition to his R&A experience and his continued interest in post-war political geography, Hartshorne's participation in some of the early meetings to coordinate American area studies, his teaching role at the National War College, and his consulting duties with the Department of Defense collectively indicates that his 'geography' was hardly that of an archaic individual trapped in the minutiae of internalist histories.[91] In the new postwar strategic order, specific sections of the globe – whether states or regions – were of significance only if they could be fitted into a larger *world picture*. If Hartshorne did not understand this before the war, he certainly did after his time with the OSS.

An important site for the forging of revolutionary geographies, and impugning Hartshorne, was the University of Washington, where William Garrison, Edward Ullman, and a cohort of graduate-student "space cadets" were leading a disciplinary shift that was defined first by a concern with geometry, logical classification, and models appropriated from physical science and economics. Later, philosophical positivism and a revisionist, Kuhnian reinterpretation of geography's history were added. The sequence is important: as Derek Gregory writes,

> geographers were less concerned with problems of intellectual substance than with the possible 'geographical' ramifications of models, concepts and techniques used by other

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Edward Ullman, "Human Geography and Area Research," *Annals of the Association of American Geographers* 43.1 (1953), pp. 54-66.

[91] Edward A. Ackerman, "Geographic Training, Wartime Research, and Immediate Professional Objectives," *Annals of the Association of American Geographers* 35.4 (1945), pp. 121-143; Barry M. Katz, *Foreign Intelligence: Research and Analysis in the Office of Strategic Services*, 1942-1945 (Cambridge: Harvard University Press, 1989), p. 16; Andrew Kirby, "What Did You Do in the War, Daddy?" in Anne Godlewska and Neil Smith, eds., *Geography and Empire* (Oxford: Blackwell, 1994), pp. 300-315; Geoffrey J. Martin, "Richard Hartshorne, 1899-1992," *Annals of the Association of American Geographers* 84.3 (1994), pp. 480-492; Richard Hartshorne, "Where in the World Are We? Geographic Understanding for Political Survival and Progress," *Journal of Geography* 52.9 (1953), pp. 382-393.

> scholars, a predilection which effectively prevented them from the 'non-geographical' evaluation of their various borrowings.[92]

During the 1950s, appropriating the accoutrements of 'hard' and 'tough' sciences such as physics and mathematics – or the work of economists and regional scientists, and some sociologists – was a strategic act at a time when the mantles of science and social science and positivism provided additional, though certainly not complete, protection from the crusades of anticommunist politicians.[93]

More importantly, for a discipline that was just beginning to gain entrance to the social sciences, government demands for technocratic, quantitative research and the promise of federal funding were extremely enticing for geographers. The Cold War culture of expertise emphasized statistics and models because they were "ideal tools for monitoring and planning in complex industrial societies." A policy-driven Geography, prescribing "the *optimum means* of achieving a *given set* of social objectives," was tailored to attract corporations and the state. Richard Morrill, for instance, recalls an important 1959-60 "quantitative symposium" supported by the Office of Naval Research. But the ONR also funded the meetings that produced *American Geography: Inventory and Prospect* (1954), a weighty tome featuring mostly statements of unabashed regionalism. "For several years after the war ONR was a major sponsor of geographical study," Kirk Stone, a former naval ensign himself, noted blithely in 1979. But the ONR, which by 1948 was supporting 40 percent of *all* American research, chose its funding

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[92] Gregory, *Ideology, Science and Human Geography*, p. 12; see also R. J. Johnston, *Geography and Geographers: Anglo-American Human Geography since 1945*, Fifth Ed. (London: Arnold, 1997); Brian J. L. Berry, "Geography's Quantitative Revolution: Initial Conditions, 1954-1960. A Personal Memoir," *Urban Geography* 14.5 (1993), pp. 434-441.

[93] David Mercer, "Unmasking Technocratic Geography," in Billinge, et al. eds., *Recollections of a Revolution*, pp. 155-199.

targets strategically, stressing national security and maintaining "listening posts" within the academy to prepare for military appropriation of cutting-edge scientific laboratories.[94]

Some of the most adventurous work in spatial science was conducted under the sign of "social physics," an approach pioneered by Princeton's John Q. Stewart and tied into the broader development of regional science and economic geography. Stewart was an early proponent of interdisciplinary projects that drew from mathematical principles to explain social patterns. At a 1949 conference sponsored by the Rockefeller Foundation, Stewart and like-minded attendees invoked cybernetics, operations analysis and other holistic products of the Second World War to justify the extension of methods from the study of "physical nature" to the analysis of its human counterpart. Stewart was also interested in geopolitics, and in an audacious 1954 article he attempted to read "natural law factors" such as gravity and "social mass" into American foreign policy. The national limitations were telling. According to Stewart, precisely the same laws were built into the American Constitution, whose structure of checks and balances was set up to "forestall the natural tendency of leaders towards self-aggrandizement and of followers towards mass hysteria."[95]

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[94] *Ibid.*, 157, 171; Leslie J. King, "Spatial Analysis and the Institutionalization of Geography as a Social Science," *Urban Geography* 14.6 (1993), pp. 538-551; Johnston, *Geography and Geographers*, 61; Gregory, *Ideology, Science and Human Geography*, p. 20, original emphasis; R. L. Morrill, "Recollections of the 'Quantitative Revolution's' Early Years: The University of Washington 1955-65," in Billinge et al. eds., *Recollections of a Revolution*, pp. 57-72; Stone, "Geography's Wartime Service," p. 93; "Announcement of the Office of Naval Research Contracts for Research in Geography," *Annals of the Association of American Geographers* 43.1 (1953), pp. 1-3; Evelyn L. Pruitt, "The Office of Naval Research and Geography," *Annals of the Association of American Geographers* 69.1 (1979), pp. 103-108; Paul N. Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge: The MIT Press, 1996), p. 59; Stuart W. Leslie, *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford* (New York: Columbia University Press, 1993).

[95] John Q. Stewart, "The Development of Social Physics," *The American Journal of Physics* 18.5 (1950), pp. 239-253; Stewart, "Natural Law Factors in United States Foreign Policy," *Social Science* 29.3 (1954), pp. 127-134; the quote is from p. 128.

Among Stewart's most prominent collaborators in the 1950s was William Warntz, who worked at Princeton while employed with the American Geographical Society (AGS). Warntz's search for "regularities in the aggregate," natural correctives in income fronts, and his general use of statistical analysis and computer technology have been linked to early Geographic Information Systems and computerized cartography. He also directly wrote against "purely verbal and descriptive methods," ignoring his own representational conceits in a search for regularities and "working hypotheses." The links between the rise of aerial photography and the detached, god's-eye perspective adopted by spatial science are equally enigmatic, but both reduced terrain to "a set of coded topographic features, 'grounded' by the digital logic of the grid." In his advocacy of a new, scientific macrogeography, Warntz placed legitimacy on the deep structure of space, not the interpreters of that space: "Geography recognizes what geographers may not."[96]

Warntz undoubtedly brought significant changes to the AGS, which in 1951 was still attempting to contend that geographic "tools and techniques have such universal application that it is viewed by some as the common denominator, or, by others, as the catalyst of the sciences." This was an argument that did not sit well with the leaders of the Carnegie Corporation, who rejected a substantial number of AGS funding

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[96] Johnston, *Geography and Geographers*, pp. 71-72; Trevor J. Barnes, *Logics of Dislocation: Models, Metaphors, and Meanings of Economic Space* (New York; Guilford, 1996), p. 130; Michael J. Shapiro, *Violent Cartographies: Mapping Cultures of War* (Minneapolis: University of Minnesota Press, 1997), p. 89; William Warntz, "Contributions toward a Macroeconomic Geography: A Review," *The Geographical Review* 47 (1957), pp. 420-424; the quotes are from p. 420, 424; Warntz, "Trajectory and Co-Ordinates"; Donald G. Janelle, "William Warntz, 1922-1988," *Annals of the Association of American Geographers* 87.4 (1997), pp. 723-731; John Q. Stewart and William Warntz, "Macrogeography and Social Science," *The Geographical Review* 48.2 (1958), pp. 167-184. William Garrison was also an Air Force cadet during the Second World War, and like Warntz and others, his introduction to mathematical training arrived through the 'systems' of meteorology. See Trevor J. Barnes, "Lives Lived and Lives Told: Biographies of

applications at the height of the foundation's support for area studies. A clue to the Corporation's rationale can be found in two conversations between the famed mapmaker Richard Edes Harrison and Carnegie's John Gardner in 1949. In the first, Harrison bemoaned the state of cartographic training in the United States, opining that there was no one institution able to "provide a man with really adequate broad-gauge training." This included the military, where he had been "doing some work." In the second, Gardner explained to Harrison that the Corporation was not willing to support educational initiatives in geography, owing to "a whole series of problems facing the field." Harrison, who was not a professional geographer, and was not on good terms with many geographers, concurred that this was a "reasonable position."[97]

The popularity of systems thinking and modeling so earnestly promoted by Warntz and others was bolstered by technological innovation, particularly in the field of computerization. Defined by the Manhattan Project, the large-scale model of academic collaboration with government and industry was quickly replicated at institutions like MIT and Stanford, two major sites of computer research. As they did with many other theoretical and physical products of the era, geographers undoubtedly benefited from and used new computer technology, but this relationship is not writ large in either the critical histories of the discipline or much of the foundational literature of spatial science. Technology, at best, is a tool incorporated into the scheme of positivist abstraction pursued by the quantifiers. Moreover, it is no surprise that geographic practice was

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Geography's Quantitative Revolution," *Environment and Planning D: Society and Space* 19 (2001), pp. 409-429.

[97] Richard U. Light, "Foreword," in "The American Geographical Society: A Statement" (1951); Office of the President, Record of Interview, JG [John Gardner] and Richard Harrison, March 30, 1949; Record of Interview, JG and Richard E. Harrison, August 10, 1949; all in Series III, Subseries A, Box 28, Folder "American Geographical Society (1934-52)", CCNY.

supplementary and subsequent to technological change. In some cases the reaction was quite delayed, or geographers failed to look beyond the *utility* of devices such as computers. In the post-war American research economy, Geography was a small but constant player, typically attracting government and industry interest on the basis of connections to other disciplines and academic developments.

Cold War area studies, moreover, had already divided the world into suitable regions. Geography's first responsibility, at least as it was traditionally understood, had been preempted. And because this was, ultimately, where questioning of the regional framework ended in area studies, and where social science began, regional geographers were ill-equipped to do much more than act in a secondary, descriptive role. Harvard President James Conant summed this position up devastatingly in 1948, at the moment that his school effectively ended the discipline's formal presence on campus: "geography is not a university subject."[98] In this sense, Hartshorne's pedagogical role at the National War College might be compared to the Army Specialized Training Program of the Second World War. Regions were living on as units of strategic intelligence and military geography, largely outside the academy.

The gurus of spatial science, on the other hand, dismissed the inevitability of regions altogether, in favour of distributions and correlations that did not always respect the compartmentalization of the earth. But this was also a derivative movement, borrowing from economic models that had already arrived directly in area studies programs or that were wholly inappropriate for the comparative political economy of the modernization theorists. Too many geographers, one Arctic specialist complained to

another in 1948, were already "more interested in pure economics than in geography," and exploration, or its new incarnation in area studies, was "almost an unknown activity in geography departments."[99]

However, it should be obvious that Geography did not lie outside the formations of Cold War social science I have sketched here. The presence of military funding was equally pervasive, if only in smaller amounts. In addition, from claims to universality to a less ambitious regional method, American Geography of the 1940s and 1950s appears, in hindsight, to be deeply *national*. In Chapter One I discussed the relevance of scientific 'frontiers' to the construction of an American Cold War globe. This was a language appropriated, if somewhat belatedly, by geographers who sought to discuss their distinct discipline as a science. I do not mean to suggest that various forms of 'geography' can be stuffed into one monolithic, militaristic unit of practice. The biographies of spatial scientists, for instance, reveal much richer and variegated lives, and the occasional dedication of quantitative scholarship to social development.[100] But nor do I wish to reify various actors and theories as oppositional or detached from a wider context. These nuances were partially apparent to John Kerr Rose, surveying the roles of geographers working directly for the federal government in the mid-1950s:

> Certainly the lot of the systematic geographer would seem to be somewhat happier. But there *are* regional geographers and graduating students who wish to specialize in a

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[98] Quoted in Neil Smith, "'Academic War over the Field of Geography': The Elimination of Geography at Harvard, 1947-1951," *Annals of the Association of American Geographers* 77.2 (1987), pp. 155-172; the quote is from p. 159.

[99] M. C. Shelesnyak to Vilhjalmur Stefansson, 7 August 1948, in Box 6, Folder "Stefansson (Vilhjalmur and Evelyn) 1946-53", M. C. Shelesnyak Papers, National Library of Medicine, Bethesda, MD.

[100] See Barnes, "Lives Lived and Lives Told." The influential regional scientist Walter Isard, for one, was a conscientious objector during the Second World War. See Trevor J. Barnes, "'Born in an Auspicious Time': Regional Science and the American Empire," paper presented at the Annual Meeting, Association of American Geographers, Los Angeles, March 22, 2002. Barnes quotes an Isard letter to Robert Hall (see above) from 1951 arguing for "more time and effort on theoretical analysis" in Geography. Hall, of course, was close to the SSRC, but this did not stop Council head Pendleton Herring from turning down a 1950 request from Isard to form a committee on "regional economic studies."

> region. More than that, there are positions in Washington, not a few of which call for regional experts.[101]

Alternatively, the detachment achieved by spatial science rested on the ability to erase human presence from representations of space, to dematerialize information from the substrates that carried it. The elimination of the grounded human is precisely what post-war synthetic sciences such as cybernetics sought. In this sense, a substantial percentage of geographic expression employed the language of the computer revolution; life was reduced to models and equations that possessed a truth above and beyond the limits of the human. At the height of quantification in geography, according to David Mercer, urban scholars focused on the city's "hardware," reinforcing "the technocratic engineering view of the city as a *machine*" without passing judgment on its failings or limitations, or their own.[102] If, as Katherine Hayles has argued, during the Cold War information lost its body, then, for a time, it also lost its spaces.[103] Yet the important point, as Hayles notes, is that the closed systems of early cybernetics or spatial science were never completely sealed. They contained the mechanisms of their own subversion, and thus their geopolitical dependence, internally.

As regions fell away from their position of intellectual prominence, or were given a strictly mathematical caste, geographers turned to the more acceptable "advancing front" of scientific progress as an alternate spatial framework. The troops of science were colonizing the social sciences, and geography was encouraged to desert the resistance immediately. Pausing to reflect on the changes that were sweeping through his

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[101] John K. Rose, "Geography in Practice in the Federal Government, Washington," in Griffith Taylor, ed., *Geography in the Twentieth Century: A Study of Growth, Fields, Techniques, Aims and Trends*, Third Ed. (New York: The Philosophical Society, 1957), pp. 566-586; the quote is from p. 586, original emphasis.
[102] Mercer, "Unmasking Technocratic Geography," p. 186.

field, Edward Ackerman remarked in 1963 that geography, in its determination to declare independence, had missed participating in the "forward salients in science." The previous decade had been spent just catching up. But he was prepared to state the problem that a scientific geography should attempt to solve: to understand the "system of humanity and its natural environment on the surface of the earth." The mention of systems was deliberate: Ackerman's world had become a cybernetic grid for design and engineering, a "revolution in rationalism," he acknowledged, that had profoundly altered "the nation's defense program." In this respect the analysis of spatial "connectivity" was far more important than considerations of difference. But the concept of a region had not vanished. It had become a *subsystem* that was part of a complex whole. Geographers had to ensure, however, that they selected the proper subsystems for study. And while dismissive of "the old concept of a 'geographic' region," Ackerman was equally quick to acknowledge the significance of political regions. Political scholarship "within the systems framework," he claimed, "is concerned with regions that have true functional significance in the great man-land system."[104] It is to this scholarship, and to a particularly significant subsystem, that I now turn.

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[103] See N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999); see also Edward W. Soja, *Postmodern Geographies: The Reassertion of Space in Critical Social Theory* (London: Verso, 1989).

[104] Edward A. Ackerman, "Where is a Research Frontier?" *Annals of the Association of American Geographers* 53.4 (1963), pp. 429-440; the quotes are from pp. 430, 435, 436, 437, 440; see also Edward A. Ackerman, *Geography as a Fundamental Research Discipline* (Chicago: Department of Geography, University of Chicago, Research Paper 53, June 1958); Donald G. Marquis, "Research Planning at the Frontiers of Science," *The American Psychologist* 3.10 (1948), pp. 430-438.

Part Three: Laboratories

Chapter 4 – The Cybernetic Continent

> There is no geographical approach to U.S. strategy which does not wind up finally in the laboratory.
>
> - William Borden, *There Will Be No Time* (1946)[1]

Introduction

Coined by MIT's Norbert Wiener in 1947, cybernetics designated "a new science of mechanisms in which the exchange of information would play a role." During the Second World War, Wiener had been working extensively for the military on a unified human-machine system that could target an enemy plane and launch anti-aircraft fire. After the war, he and a diverse group of scientists and intellectuals generalized this cybernetic vision to encompass human nature. Humans were, as Alan Turing 'proved' in 1950, no different from machines. Computers operated like human minds – and vice versa. The "fascination with information-based feedback systems" spread far beyond mathematics and engineering to envelop (socio)biology and the social sciences. And despite Wiener's abandonment of defence connections, cybernetics emerged as a heavily militarized "universal discipline," blurring human and nonhuman most successfully "in the agonistic field, if not the battlefield itself."[2]

In *An Introduction to Cybernetics* (1956), W. Ross Ashby positioned cybernetics next to the "real machine – electronic, mechanical, neural or economic – much as

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[1] William L. Borden, *There Will Be No Time: The Revolution in Strategy* (New York: MacMillan, 1946), p. 166. As Gregg Herken points out, Borden's pessimistic book, unlike others written in during a period of American atomic monopoly, clearly anticipated the proliferation of nuclear weapons to American enemies, and their future delivery by long-range rockets. See Herken, *Counsels of War* (New York: Knopf, 1985), pp. 10-12.

[2] Peter Galison, "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision," *Critical Inquiry* 21 (1994) 228-266; the quotes are from pp. 256, 261; Paul Edwards, *The Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge: The MIT Press, 1996), pp. 20, 146; Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991); Steve J. Heims, *Constructing a Social Science for Postwar America: The Cybernetics Group, 1946-1953*

geometry stands to a real object in our terrestrial space." Cybernetics was an abstracting, generalizing science that respected few limits to rationality. But, at least as conceived by advocates such as Wiener and Gregory Bateson, it was a synthesis that was built up from the results of finite experiments and more "exact theorems" in engineering, physics, and logic. The most ambitious cyberneticists attempted to extend these into other fields of inquiry, including the social sciences. In this sense it shared with positivism certainty and fearlessness; the frontiers of science were not fragile or susceptible to deconstructive impulses, but were instead heroic zones of confident endeavour. In his 1948 manifesto *Cybernetics*, Wiener described these interdisciplinary "boundary regions of science" as offering "the richest opportunities to the qualified investigator." Proper exploration of these blank spaces required a team of specialists who could depend on one another's expertise. If not managed, steered, or *governed* (akin to the Greek derivation of the term cybernetics), these explorations would, for Wiener, resemble "what occurred when the Oregon country was being simultaneously invaded" by many competing groups: "an inextricable tangle" of laws and nomenclature.[3]

The spread of cybernetic ideas was also exciting for the popular press. Once removed from the analog register of instrumentation, and placed in a digital sphere, computers of the post-war period were increasingly referred to as "electronic brains" – a

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(Cambridge: The MIT Press, 1991); Geof Bowker, "How to be Universal: Some Cybernetic Strategies, 1943-70," *Social Studies of Science* 23 (1993), pp. 107-127; the quote is from p. 107.

[3] Ashby is quoted in John Clute and Peter Nicholls, eds., *The Encyclopedia of Science Fiction* (London: Orbit, 1993), p. 287; Heims, *Constructing a Social Science*, pp. 106-107; Norbert Wiener, *Cybernetics; Or Control and Communication in the Animal and the Machine* (New York: John Wiley and Sons, 1948), pp. 8-9; Dana Polan, *Power and Paranoia: History, Narrative, and the American Cinema, 1940-1950* (New York: Columbia University Press, 1986), pp. 159-164; Bowker, "How to be Universal," p. 113. For discussions of cybernetics in the Soviet Union, see David Holloway, "The Political Uses of Scientific Models: The Cybernetic Model of Government in Soviet Social Science," in Lyndhurst Collins, ed., *The Use of Models in the Social Sciences* (London: Tavistock, 1976), pp. 110-129, and Slava Gerovitch, *From Newspeak to Cyberspeak: A History of Soviet Cybernetics* (Cambridge: The MIT Press, 2002).

term that delighted some, such as Wiener, and frustrated others. The speed of new computers meant that they could be usefully compared to organisms, but a specifically mid-century fascination with human engineering and organizational behaviour meant that humans could also be equated with machines. For the first time, cyberneticists argued, this symbiosis was present in history; a new age of form and information had replaced that of materialism. As computers and their workings grew less visceral and palpable, the former set of comparisons became less muted. But perhaps this was because more complex *cyborgs* (cybernetic organisms) were on the horizons of science and science fiction, or because artificial intelligence appeared to be a question of software rather than hardware. Yet the anthropomorphic trend was a pervasive one.[4] And in the light of cybernetics, this match could be made – most frequently for military *men* – in the opposite manner.

If extraterrestrial environments were the ultimate cyborg vistas, it was obvious that cybernetic research had quite practical implications for earth-bound exploration as well. In one prominent version, the cyborg was the new masculine colonizer, a being that could adapt to and eliminate geographic difference – the perfect icon for a new systematic Geography. Consider this passage from Joseph Russell's "Military Geography" contribution to the edited volume *American Geography: Inventory and Prospect* (1954):

> Geographic studies in the field of research and development, as distinguished from intelligence, were started during the war, but have been considerably expanded during the

[4] "The Thinking Machine," *Time* (January 23, 1950), pp. 55-60; Galison, "The Ontology of the Enemy," pp. 256-257; Haraway, *Simians, Cyborgs, and Women*, p. 149; Bowker, "How to Be Universal," pp. 110-11; Tom Stapleford, "Emergence of the 'Electronic Brain:' Popular Discourse and Postwar Computing Technology," paper presented at the Annual Meeting of the Society for Social Studies of Science (4S), Cambridge, MA, November 5, 2001; Jennifer Light, "When Computers Were Women," *Technology and Culture* 40.3 (1999), pp. 455-483. 'Cyborg', of course, is a term used in hindsight; it was not coined until 1960 (see the Conclusion).

> postwar period. The studies of extreme and unfamiliar environments were undertaken to note the effects of these environments on men, equipment, and materiel. There was need for the development of new machines, new lubricants, new methods of upkeep to operate efficiently in extreme cold, or in extreme heat, or on steep slopes...very wet or very dry climates, very deep snow or very rugged or high terrain, which, if encountered for any extended period of time, either singly or in combination, can impair seriously the performance of machines and humans.... These examples point to the desirability of having ultimately an analysis of the physical environment of world regions in terms of the critical elements or combinations of elements that impede or preclude satisfactory equipment and human performance.[5]

Russell's was still a regional geography, determined to map areal differentiation for the purposes of military movement, but geographic diversity was, ultimately, a factor to be overcome by the new supermen. Here, he suggested, was where Geography could fit into a cybernetic world – as a study of natural environments that a universal man-machine had to be aware of, but could then *regulate* as much as possible.

Displaying a hint of environmental determinism, Russell remained skeptical that such extreme landscapes were of any geopolitical significance. But the need for a complete analysis, beginning with the most important regions, was required in a Cold War geopolitical system that valued the entire globe and all of its regions as strategically relevant. When it was necessary to move from a detached world-view to a local position, explorers – and those that monitored and controlled them – could remain abstracted from specific landscapes. More recent developments expanding and linking computer mapping to military 'hardware' worn by the soldier-in-the-field indicate that neither Russell nor the early cyborg theorists were deluded. The dream of a bloodless victory,

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[5] Joseph A. Russell, "Military Geography," in Preston E. James and Clarence F. Jones, eds., *American Geography: Inventory and Prospect* (Syracuse: Syracuse University Press, 1954), pp. 484-495; the quote is from pp. 494-495.

powered by information science and detached command structures, requires that rational and technical authority order a "chaotic and dangerous" geography.[6]

This chapter brings together – and destabilizes – holistic, functional worldviews with a specific geopolitical space. I am less interested in theories of cybernetics and their extended, rather haphazard families than in certain systems and networks with a *premise* that were built, often physically, using the same theoretical principles as justifications and inspirations. Whether these constructions were accurate extensions of theory is not a relevant question. Rather, they were developed, and used, within the practical context of a *continent*, an environment that they also defined and stabilized. I am referring here to the defence laboratories of MIT and the RAND Corporation, and the role at these sites of certain technologies such as computers and radar. By molding a false surety, or by inscribing lines of division around a territorial citadel, the models of the early Cold War adjusted for the growing spatial and technological complexity of an integrated globe. But as I will explain, the production and imagination of North America as a vast cybernetic grid also required the mastery of another, region at the edge, or frontier, of this network – the Arctic.

There is little sense in attempting to classify the history of Cold War science and social science by frameworks, paradigms, laws or ontologies. Rather, the figures who moved across these domains, and the spatiality of these themes, were linked by new modalities of knowledge production that were inherently practical, a cluster of skills and machines that sat uneasily, and productively, between theories and practices. Peter

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[6] Michael Shapiro, *Violent Cartographies: Mapping Cultures of War* (Minneapolis: University of Minnesota Press, 1997), p. 82; Edwards, *The Closed World*, p. 72; Derek Gregory, "The Ideology of Control: Systems Theory and Geography," *Tijdschrift voor Economische en Sociale Geografie* 71.6 (1980), pp. 327-342.

Galison has effectively considered the attempt in atomic physics to build artificial worlds, or digital devices, which would "simulate nature in its complexity." This was, initially, a local process, but its advocates believed it could be replicated and coordinated across space.[7] Precisely the same conviction sat at the heart of nuclear strategy. Extensive simulations of political crises run by the RAND Corporation and others were designed to help bridge academic and policy circles methodologically, as the personal rosters of the two spheres were blurring. But neither physics nor strategy, for all their dependence on and allegiance to the security state, were necessarily dependent on continental boundaries. Each could be conceived at a higher level of abstraction, or employed in the service of a subversive internationalism. The production of a cybernetic continent was, instead, the task of projects that drew from physics, strategy, and much else at the behest of Cold War imperatives. These initiatives challenged distinctions between practices and theories and sought to extend the terrain of simulation from laboratories into a wider world, but they were uniquely premised on the spatiality of that world.

I am certainly indebted to recent histories and sociologies of 'systems' that do not read technology and scientific practice through the words and deeds of great inventors, the vocabulary of determinism, or partitioned social, economic, and other frames.[8] The precarious and inhuman aspects of the continental network that concerns me should be apparent. But this chapter does not adopt ethnographic tools, nor is the object of study an

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[7] Peter Galison, "Computer Simulations and the Trading Zone," in Peter Galison and David J. Stump, eds., *The Disunity of Science: Boundaries, Contexts, and Power* (Stanford: Stanford University Press, 1996), pp. 118-157; the quote is from p. 121.

[8] See the essays in Wiebe E. Bijker, Thomas P. Hughes, and Trevor J. Pinch, eds., *The Social Construction of Technological System: New Directions in the Sociology and History of Technology* (Cambridge: The MIT Press, 1987).

artifact whose convoluted development is more fully sketched. I am more interested in the historical relationship between technology and territory, meaning that I want to avoid what Eric Laurier and Chris Philo have aptly dubbed the "flattened spatial imaginary" of science studies and its networks.[9] The environment at the heart of this chapter is a composite of inseparable imaginings and practices, but its existence cannot be reduced to a set of shared characteristics, or lines of association resulting in a grid almost as stable as the one that was initially challenged.

Thought and Action at MIT

The intellectual connection between academic research and national security, drawn so tightly together during the Second World War, was difficult to relinquish as military money continued to flood into universities during the early Cold War. The Massachusetts Institute of Technology was the premier recipient of this funding, and its flagship postwar project was the Lincoln Laboratory. In a 1954 speech, MIT President James Killian described the Laboratory as a "major effort in the field of *safety* engineering." Its stated purpose, to provide "the nation with a more effective defense" at a time when conditions of *normal peace* appeared remote, could not have been more straightforward. The Lincoln Lab also fitted with the oft-repeated claim that MIT held a unique position in both the "world of action" and "world of thought."[10] But the term

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[9] E. Laurier and C. Philo, "X-Morphising: Review Essay of Bruno Latour's *Aramis, or the Love of Technology*," *Environment and Planning A* 31 (1999), pp. 1047-1071; the quote is from p. 1064.

[10] Killian is quoted in "National Safety and the Universities," *Technology Review* 56.7 (1954), p. 357, my emphasis; see also J. R. Killian, Jr., "Adapting M.I.T.'s Policies and Program to the Current National Defense Situation," in F. Leroy Foster, ed., *Sponsored Research at M.I.T., 1900-1968*, Volume III: 1947-1956; Part I: 1947-1953, Institute Archives, Massachusetts Institute of Technology, Cambridge, MA (hereafter MIT), n.p; Memo, Carl F. J. Overhage to General McCormack, "Notes on Lincoln Laboratory and M.I.T.," 27 February 1959, in MC 365 (Albert G. Hill Papers), Box 14, Folder 9, MIT; Memo, Ithiel Pool to J.A. Stratton, "Reasons for the Development of the Behavioral Sciences at M.I.T.," March 1, 1956,

'safety engineering' additionally reflected the belief that security was a function of science, and that the defence of North America could be engineered systemically.

By the 1950s, MIT's campus and the Institute's outlying properties were dotted with numerous interdisciplinary laboratories of electronics, nuclear science and engineering, instrumentation, and other booming fields, descendents of both the Manhattan Project and MIT's own Radiation Laboratory, where account's of radar's tangled history often come to rest.[11] The Lincoln Laboratory, which still occupies a sprawling, defoliated property in the Boston suburb of Lexington, owes its existence to *both* radar and the bomb. Its origin-story, recounted in equal measure by historians of science and students of Cold War strategy, unfolds in a familiar, glossy fashion. A symbolic trigger – the detonation of a Soviet atomic device in 1949 – is combined with a slightly cantankerous visionary, George Valley, an MIT physicist who had resisted the lure of Los Alamos but came to his senses in a risk-laden world of two nuclear powers. Valley's concerns were both patriotic and personal: he realized that the location of his new home in Lexington, with its striking view of the Boston skyline, also offered little blast protection from that direction.[12] After discovering the woefully inadequate

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AC 132 (Records of the Office of the Chancellor (Stratton), 1949-1957), Box 4, Folder "Center for International Studies", MIT, p. 1. *Technology Review* was (and is) MIT's own journal.

[11] On Cold War research at MIT, see Stuart W. Leslie, *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford* (New York: Columbia University Press, 1993); Christophe Lecuyer, "The Making of a Science Based Technological University: Karl Compton, James Killian, and the Reform of MIT, 1930-1957," *Historical Studies in the Physical Sciences* 23.1 (1992), 153-180; Michael A. Dennis, "'Our First Line of Defense': Two University Laboratories in the Postwar American State," *Isis* 85 (1994), pp. 427-455; Robert Buderi, *The Invention that Changed the World: How a Small Group of Radar Pioneers won the Second World War and Launched a Technological Revolution* (New York: Touchstone, 1996).

[12] Lincoln Laboratory's official history is Eva Freeman, ed., *MIT Lincoln Laboratory: Technology in the National Interest* (Lexington, MA: Lincoln Laboratory, 1995); see also William H. Radford, "M.I.T. Lincoln Laboratory: Its Origin and First Decade," *Technology Review* 64.3 (1962), 15-22, and H.W. Serig, *Project Lincoln Case History* (Three Volumes), 10 December 1952 (Air Force History Support Office, Bolling AFB, Washington), Lincoln Laboratory Archives, Lexington, MA (hereafter LLAB). For the rather apocryphal Valley story, see Buderi, *The Invention that Changed the World*, p. 359.

condition of American air defences, Valley took up the problem with contacts in the Air Force, who, after a series of MIT studies, green-lighted the Lincoln Laboratory, which in turn produced two of the Cold War's most remarkable feats of engineering: the Distant Early Warning (DEW) Line and the SAGE (Semi-Automatic Ground Environment) computer system.[13]

SAGE and the DEW Line were the two most prominent and promising components of the continental defence program of the early Cold War, the center and periphery of an "emerging shield," projected and maintained by "the talents of man with the best aptitude of machines," that transformed North America into a vast cybernetic grid.[14] When coordinated, such technological eyes, ears, brain, and, ultimately, fists – to use the parlance of the period – generated television-like *composite* "air pictures" that were "drawn like maps." These graphic displays combined the recording and calculation abilities of computers with the "perceptive and display talents of radar." Once fully installed, SAGE divided a continental space into a grid of "control areas." Each area possessed a central direction center, a massive concrete block that had no physical link to the landscape it was placed in (Figure 9). Sightings detected on individual radar 'scopes' covering a smaller area of each sector were then plotted – first manually, and, in later versions, automatically – on a larger, transparent grid that could be monitored by commanding officers (Figures 10 and 11). As a hypothetical battle developed, SAGE's

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[13] One of the better discussions of SAGE is in Edwards, *The Closed World*, Chapter 3. See also George E. Valley, Jr., "How the SAGE Development Began," *Annals of the History of Computing* 7.3 (1985), pp. 196-226.

[14] "The Emerging Shield," *Air University Quarterly Review* 8.2 (1956), pp. 49-69; the quote is from pp. 56. See also Cnl. Wendell W. Bowman, "Electronics in Air War," *Air University Quarterly Review* 3.1 (1949), pp. 48-56; Kenneth Schaffel, *The Emerging Shield: The Air Force and the Evolution of Continental Air Defense, 1945-1960* (Washington: Office of Air Force History, 1991), and David F. Winkler, *Searching the Skies: The Legacy of the United States Cold War Defense Radar Program* (Langley, VA: United States Air Force Combat Command, 1997).

fluid representational capabilities provided the appropriate "basis for the necessary human judgment." As Paul Edwards has noted, "[a] SAGE center was an archetypal closed-world space: enclosed and insulated, containing a world represented abstractly on a screen, rendered manageable, coherent, and rational through digital calculation and control."[15] But this was also a geopolitical move, fixing in place a boundary or net that *opposed* secure regions to an insecure exterior.

Capturing and fixing a continental space in a microworld, whether within one of thirty SAGE direction centers, the Lincoln Laboratory, or the similar environments built by the RAND Corporation for behavioural studies, was an act of *construction*. As Bruno Latour has stated, "since scientific facts are made inside laboratories, in order to make them circulate you need to build costly networks inside which they can maintain their fragile efficacy. *If this means transforming society into a vast laboratory, then do it.*" Latour's tongue-in-cheek directive is not only singularly applicable to cybernetics, but is more generally useful for geographical studies of "meaningful situations or configurations of the world," or scientific practices. It is certainly the case that the creation of controlled microworlds "provides models and strategies for reconstructing the world around us," for making that crucial step between the "mastery of locally situated

[15] "SAGE Aircraft Defense," *Technology Review* 58.5 (1956), pp. 230, 264, 266; the quotes are from pp. 230, 264; Report of Proceedings of SAGE Press Conference, 16 January 1956, Box DO.5.3.3/5, Folder "SAGE Press Conference 1956," LLAB; Edwards, *The Closed World*, p. 104; "SAGE: The New Aerial Defense System of the United States," *Military Engineer* 48.322 (1956), pp. 115-117; "Sighting With SAGE," *Newsweek* (July 7, 1958), p. 65; "Pushbutton Defense for Air War," *Life* 42.6 (February 11, 1957), pp. 62-67. A good description of a SAGE direction center is Robert R. Everett, Charles A. Zraket, and Herbert D. Benington, "SAGE – A Data-Processing System for Air Defense," *Annals of the History of Computing* 5.4 (October 1983), pp. 330-339. The piece was originally published in the *Proceedings of Eastern Joint Computer Conference* (Washington, December 1957), pp. 148-155.

phenomena" and the standardization and of this achievement "so that it is replicable in different local contexts."[16]

But a laboratory does not have to be a physical enclosure, and what 'counts' as science is not just lab work. Moreover, the authority vested in scientific facts at MIT was secondary to a larger relationship between geopolitics and science that took place in the "channels of information that exist[ed] behind and beyond the lab environs."[17] The scientific environments constructed at MIT – from the Lincoln Laboratory to the continental defence grid – were also strategic, made possible by and designed to suit geopolitical discourses of air power, military balance, and homeland insecurity. In this sense, SAGE might have contributed to or even epitomized a technological closed-world, but the boundary-producing performance of foreign policy was equally, reciprocally responsible for the artifact titled SAGE, its 'invention', and its particular configuration of space. To assert the need for an improved defence network, scientists did not and *could not* gesture to the truths of a technological system that was very much an ad hoc and speculative project. Instead, they cited a geopolitical reality whose scientific status was patently precarious.

From the Laboratory to the Skies

In the case of Cold War continental defence, incorporating a geopolitical sensibility does not connote leaving the banks of the Charles River behind. After George

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[16] Bruno Latour, "Give Me a Laboratory and I will Raise the World," in Karin D. Knorr-Cetina and Michael Mulkay, eds., *Science Observed: Perspectives on the Social Study of Science* (London: Sage, 1983), pp. 141-170; the quote is from p. 166, original emphasis; Bowker, "How to be Universal," p. 112; Joseph Rouse, *Engaging Science: How to Understand its Practices Philosophically* (Ithaca: Cornell University Press, 1996), p. 30; see also his *Knowledge and Power: Toward a Political Philosophy of Science* (Ithaca: Cornell University Press, 1987).

[17] Steve Fuller, *Thomas Kuhn: A Philosophical History for Our Times* (Chicago: University of Chicago Press, 2000), p. 223.

Valley's Air Defense Systems Evaluation Committee (ADSEC) had presented its scathing survey of the nation's air defences to the Air Force, Louis Ridenour, the Air Force's chief scientist, asked MIT President James Killian to set up a laboratory devoted to the study of the problems identified by Valley and his colleagues. Killian and other MIT administrators were reluctant to take on what promised to be another controversial project that would divert resources and labour from MIT's educational functions, but they consented under the conditions that an Air Force-funded study group would first "conduct an intensive and comprehensive analysis of the overall problem of air defense." They were also encouraged by the "scientific approach" provided by ADSEC.[18]

The study group, named Project Charles, was one of several well known 'summer studies' held at MIT during the late 1940s and early 1950s; I have already mentioned one, Project Troy, in the previous chapter. These were intensive, interdisciplinary, and influential gatherings of academics and military employees that addressed numerous facets of Cold War scientific conflict, from undersea warfare and civil defence to propaganda technologies and nuclear aircraft. Summer studies were not just scientific brainstorming sessions. They were crude war games, insofar as they began with presumptions concerning alliances, enemies, and geographical orders of secure and insecure places. Such assemblies were also dubbed "systems studies," a more accurate description of their philosophical intent and scope, given the popularity of the word 'systems' in post-war management, engineering, and other fields that eliminated the distinctions between science and social science. Beginning in February 1951 (and thus

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[18] Kent C. Redmond and Thomas M. Smith, *From Whirlwind to MITRE: The R&D Story of the SAGE Air Defense Computer* (Cambridge: The MIT Press, 2000); *History of the Electronic Systems Division, January-June 1964*, Volume I: SAGE – Background and Origins, LLAB, Chapter 3. Killian was also

stretching the definition of a summer study to its limit), the 28 members of Project Charles, supported by 16 consultants, were exposed to two distinct but imbricated air defence 'realities': those proposed at Pentagon strategy briefings, and three successful trial interceptions of live aircraft using the Whirlwind computer that later became the heart of SAGE.[19]

Project Charles was explicitly situated within a novel geopolitical context. The final report's preface begins with this statement:

> For the first time in history, as a consequence of the atomic explosion in the Soviet Union, the United States is confronted with a really serious threat of a devastating attack by a foreign power. This new danger has necessitated major changes in the scale and methods for the defense of this country...

A consideration of complex technical problems involved in aircraft detection and warning was thus dependent on assertions of the vulnerability of the American population – a product of "geographical concentration of industry and population" – and the unpredictability of Soviet behavior. American strategists and scientists were in the awkward position of estimating the importance of *domestic* targets, and the "lack of knowledge of what we have to defend against" was turned into an insecurity problem, with the enemy holding "the initiative."[20] Despite this language of deep uncertainty, the Project Charles report, particularly in its appendices, was filled with the mathematization of combat conditions.

The "scientific statesmen" on advisory committees to government departments such as the Office of Defense Mobilization explicitly viewed summer studies in the terms

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impressed by Ridenour's prophetic contention that an air defence laboratory would also serve as a stimulus for the Massachusetts electronic industry. See Freeman, ed., *MIT Lincoln Laboratory*, p. 7.

[19] On summer studies, see J. R. Marvin and F. J. Weyl, "The Summer Study," *Naval Research Reviews* 19.8 (1966), pp. 1-7, 24-28; *Problems of Air Defense*: Final Report of Project Charles, Volume 1 (Cambridge: MIT, 1 August 1951), MIT, Preface. See also Redmond and Smith, *From Whirlwind to MITRE*, pp. 1, 100-102; Gregg Herken, *Counsels of War* (New York: Knopf, 1985).

of systems engineering. Such initiatives promised to integrate the requirements of both routine construction and laboratory research with new technologies into an "operating system" which would absorb new components while still running smoothly. Systems engineering, therefore, traveled beyond its predecessor, operations research, to follow actual construction work and coordinate "the overall system requirement with local conditions." The field, the site of these local conditions, was thus incorporated into a totalized frame as one more set of variables. But the system was also seen as an idea with an end-product – a material manifestation. By tracing progress to completion, engineers could thus gain legitimacy in the areas of both industrial management and military command.[21] If it did not colonize parts of these realms, systems engineering certainly brought them closer to academic research *and theory*, and was thus the most direct exemplar of the 'iron triangle' of the military-academic-industrial complex.

Many of the members and conclusions of Project Charles migrated into Project Lincoln, which became the Lincoln Laboratory in 1952. Before it could move into its private Lexington facilities, Project Lincoln's use of a campus lounge, with an armed guard posted at the door, elicited complaints from other MIT staff and students, a reaction that foreshadowed more substantial protests against MIT's military and intelligence ties in the 1960s.[22] Even members of Project Charles and Lincoln were concerned with the purpose and utility of such high-profile congresses. Chief among them was the consistently caustic George Valley, who remarked in an April 1952 letter to

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[20] *Problems of Air Defense*, Volume 1, pp. xvii, 3, 9, 203.

[21] These aspects are intriguingly discussed in F. B. Llewellyn, "Systems Engineering with Reference to Military Applications," November 1, 1951, AC 4, Box 194, Folder 11, MIT. For a general discussion of air defence and the DEW Line in the language of systems engineering, see "Descriptive Proposal for Project Corrode," May 13, 1953, in Serig, ed., *Project Lincoln Case History*, Volume III, LLAB, pp. 92-103.

[22] For the armed guard incident, see J.A. Stratton to F.W. Loomis, February 11, 1952, AC 4 (Records, Office of the President, 1930-1958), Box 153, Folder 4 ("Lincoln Laboratory, January-May 1952"), MIT.

James Killian, "looking back...I remember chiefly the luncheons, which were fattening." This sentiment did not prevent Valley from accepting an important role as assistant director of the Lincoln Laboratory. Killian and his staff decided to separate the Laboratory's multi-million dollar expenditures from the MIT budget, and did the same with two other military-dependent projects, the Operations Evaluation Group and the Instrumentation Laboratory. All three classified programs were, in 1955, bureaucratically segregated under a new Division of Defense Laboratories. Less than two years later, this was replaced by a Division of Sponsored Research, which also included MIT's Industrial Cooperation section, the office that managed and organized external contracts such as summer studies, and the new Weapons Systems Evaluation Group. Of course, the separation was hardly complete. Several MIT employees, including Killian and Valley, held top-secret military and Atomic Energy Commission (AEC) 'Q' clearances.[23]

The Project Charles participants were very aware that they were part of a broad and significant debate over air defence, a dispute that included, among others, members of the Air Force – particularly its powerful Strategic Air Command – and the popular press. Controversy reached a feverous pitch after the conclusion of a follow-up to Project Charles, now dubbed simply the 1952 Summer Study. In addition to the divisive, symbolic presence of physicist J. Robert Oppenheimer, what sparked critics was the study's advocacy of a comprehensive radar chain across the northern reaches of the continent. After being leaked to the press this proposal resulted in denunciations of a

[23] Valley to Killian, April 10, 1952, in *Ibid*; Memo, Killian to "All Members of the Staff," December 2, 1954, in F. Leroy Foster, *Sponsored Research at M.I.T., 1900-1968*, Volume II: 1947-1956, Part II: 1954-1956 (1984), MIT, n.p. Foster's valuable patchwork histories record Lincoln Laboratory expenditures of $7,597,000 in Fiscal Year 1952, $18,778,000 in 1954, and $27,608,000 in 1956.

wildly expensive 'Maginot Line'. Prominent figures associated with continental defence research at MIT weighed in to defend the suitability of early warning as part of a *balanced* military stance, a natural response to the "realities of the atomic age." In the most prominent rebuttal, MIT President Killian and Lincoln Laboratory director Albert Hill argued that it was "creating a dangerously false issue to charge either the military mind or the scientific mind with having a warped or distorted point of view." Praising Killian and Hill's measured argument, Vannevar Bush contrasted it with another piece in *Fortune*, which, Bush believed, "seems to me to give [the Soviet Union] everything they might need in order to estimate our whole situation in some detail."[24]

Just as Project Charles had incorporated social scientists to explore and explain the economics of vulnerability and dispersal, the 1952 Summer Study was an interdisciplinary venture that included Arctic geographer and Office of Strategic Services veteran Kirk Stone as well as scholars versed in transportation economics and communications. Stone and two additional participants provided an appendix on "Geographic Studies," which surveyed Arctic terrain using aerial photographs, maps, and personal recollections to determine where environmental factors "were the most favorable, or, as the case often was, the least unfavorable" for the construction of small radar stations. The presence of Stone and others removed from the specifications of radar technology was critical, and Stone continued to consult for the Lincoln group after the construction of the Laboratory, providing lists of contacts who could assist with the Arctic aspects of radar work. As the Study's leader, MIT physicist and electrical

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[24] *Final Report*, 1952 Summer Study Group, 10 February 1953 (2 Volumes), LLAB; Lloyd Berkner, "Continental Defense," *Current History* 26 (1954), pp. 257-262; the quote is from p. 262; James R. Killian Jr., and A. G. Hill, "For a Continental Defense," *The Atlantic Monthly* 192.5 (November 1953), pp. 37-41; the quote is from p. 39; Bush to Killian, October 28, 1953, AC 4, Box 4, Folder 6, MIT.

engineer Jerrold Zacharias, observed, "one does not take a course preliminary to a Ph.D. in physics on the human problems of the Arctic." These problems were not only compatible with, but also critical to the synthetic military research of the Lincoln Laboratory. Albert Hill noted in 1951 that the Laboratory's first charter "provided for work in the field of scientific reconnaissance and intelligence...by mutual consent of MIT and the Air Force inasmuch as it was complementary to an existing program at MIT for [the] CIA."[25] Hill was referring to the Center for International Studies (CEN IS), whose origins and work I discussed in the previous chapter.

MIT also hosted a 1955 follow-up to Project Charles, an Office of Naval Research-funded study titled Lamp Light, featuring several alumni of the earlier group and employees of Lincoln Laboratory. Unsatisfied with the scope of the air defence network under construction, they were determined to extend it outward, particularly into the stretches of the Pacific and Atlantic Oceans that flank the coasts of North America. But Lamp Light was also a more rigorous exercise than Charles, featuring additional geographic tests for each systems proposal:

> The simplest method of visualizing a system's effectiveness against an attack, and a good method of estimating its quality, is to take the position of an enemy and plan an operation against it, and then study the possible actions of the defense against the attack as it progresses step by step across a map.

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[25] K.H. Stone et al., Appendix G, "Geographic Studies," *Final Report*, Summer Study Group, Volume Two, LLAB, p. G-1; Memo, W. G. Metcalf to M. M. Hubbard, 4 March 1953, "Personnel with Arctic Experience," and Kirk H. Stone to A. G. Hill, 29 January 1953, in Box DO.5.1.2/4 (Director's Office – Projects and Programs – Project Lincoln Records), Folder "Dew Line – Skull Cliff, Alaska," LLAB; Jerrold Zacharias, "Scientist as Advisor," in MC 31 (Jerrold Zacharias Papers), Box 42, Folder "Scientist as Advisor, 3/29/1961", MIT, p. 5; "History of Efforts to Establish an Air Defense System Laboratory," July 9/51, MC 365, Box 14, Folder 7, MIT, p. 7. In a festschrift on the occasion of Zacharias's 60th birthday, Lloyd Berkner (see Chapter One) wrote that 'Zach' was "among the great *strategists* of our day.... He was among the leaders who have shown that today's national strategy *depends no longer on geography but on the appropriate applications of science* to the whole spectrum of our national affairs." In MC 31, Box 7, MIT, my emphasis. See also Jack S. Goldstein, *A Different Sort of Time: The Life of Jerrold R. Zacharias, Scientist, Engineer, Educator* (Cambridge: The MIT Press, 1992).

More specifically, Lamp Light participants assumed that certain cities would be targets, used the CIA's National Intelligence Estimates (now known to be inflated) to formulate an estimate of Soviet strength, and then made calculations to determine how many enemy planes would have to breach North American defences to cause fifteen million deaths. Given that map tests were being conducted on proposed systems, and the detachment with which strategists bandied about such numbers during the 1950s, it is safe to assume that the figure of fifteen million was considered *acceptable*. Anything more would be startling, and too debilitating. These tests were treated as games, with one team commanding offensive units and the other positioning defensive forces. While admittedly laced with arbitrariness, the visual benefits of their mobile omnipotence were cited repeatedly. Larger, more complex simulations, however, required the comfort of mathematical analyses.[26]

At the same time that the Lincoln Laboratory was under construction, the RAND Corporation was wrapping up a radar research project of its own. Owing to their mutual dependence on the Air Force, the two groups were kept appraised on developments. A meeting in Santa Monica between participants found "agreement...in wide areas." The hallmark of all early air defence discussions, one MIT researcher wrote, "was a map or globe covered with arrays of overlapping circles" showing the need for complete, continuous radar coverage over strategic areas. At RAND, as in Project Lamp Light, mathematical models were supplemented by map exercises. This much, at least, was shared between the groups in Cambridge and Santa Monica. Some RAND theorists

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[26] Massachusetts Institute of Technology, *Defense of North America: Final Report of Project Lamp Light*, Volume I, 15 March 1955, in MC 420 (Jerome Wiesner Papers), Box 126, p. 17; Volume III, *Ibid.*, p. 11-4; Volume IV, *Ibid.*, p. 15-2. This box, and others in the Wiesner Papers, are full of declassified documents, and hold no folders.

remained opposed to radar lines, going so far as to suggest that the DEW Line was proposed only because MIT scientists "could find no other use" for the expensive computer technology developed at the Institute with government money. These criticisms were supplemented by the more valid concern that DEW's "usefulness may be greatly reduced by repeated warnings set off by Soviet spoof raids," a flaw that had not been corrected in the design stages. Others saw early warning lines as useful, in that they would provide American bombers with more time to get off the ground – and thus avoid destruction sitting at their respective bases. RAND scientists "were often more politically conservative than those in academia."[27] Yet, as part of a larger, interdisciplinary collective, their influence on the culture of strategic science during the 1950s is difficult to underestimate.

Simulations, Strategy, and Systems

As the foundations for the Lincoln Laboratory and its "all-out technological attack on some of the new problems of air defense" were being laid, a RAND consultant named John L. Kennedy was also taking an interest in these conundrums, but from an alternative perspective. In August 1950, having drawn attention to the importance of "human factors affecting man-machine behavior in a man-machine system," Kennedy suggested that RAND set up a department of psychology. His request led to the creation of a Systems Research Laboratory (SRL) in May 1951. Five months later, two more psychologists and a mathematician had been added. The SRL's first project was the

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[27] See Memo to Killian, "Meeting on Air Defense," n.d., AC4, Box 136, Folder 3 (Lincoln Laboratory – Historical Papers 1949-1951), MIT; Louis D. Smullin, "Cooks for the Motor Pool," in "Festschrift," MC 31, Box 7, MIT, p. 1; E. J. Barlow, *Active Air Defense of the United States, 1954-1960*, RAND R-250, December 1, 1953, RAND Library, Santa Monica, CA (hereafter RL), pp. 2, 46; Herken, *Counsels of War*, p. 75; *Staff Report for Air Defense Study*, RAND R-225, September 1, 1951, Box B99, Curtis E. LeMay

construction of a "fairly complete physical model" of a Tacoma, Washington Air Defense Direction Center (Figure 12). Computers had made possible what an early SAGE manual called the "synthetic air defense situations," or simulations, that were useful not only for training personnel, but for more general research into individual and organizational behaviour under duress in a contained environment. This, in turn, would lead to a sharpening of the man-machine relationship at the heart of SAGE, designed so that electronic components "carry out those task which men do most poorly in air defense," but also so that computer data was presented in the most usable form for its *use* by humans.[28]

Before turning in some detail to the Systems Research Laboratory, however, some further background is required. Nowhere was the combination of strategy and science more pervasive during the early Cold War than at Santa Monica's RAND Corporation. Like the study groups established at MIT, RAND was a practical outgrowth of the emergent interest in the scientific aspects of air power and nuclear war. General Henry 'Hap' Arnold sought a site where civilians could work full-time on military analysis for the Air Force. RAND's reputation as a haven for brilliant and eccentric intellectuals who coolly calculated the mechanisms of this combat is well known. But RAND was also a site of significant debate and dissention, not only with respect to its sponsor, the U.S. Air Force, but also internally. The key debate among those who

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Papers, Library of Congress Manuscript Division, Washington, DC (hereafter LOC). The Santa Monica meeting took place on November 12 and 13, 1951.

[28] Press Release, January 18, 1956, AC 132, Box 11, Folder "Lincoln Laboratory," MIT; F. N. Marzocco, *The Story of SDD*, RAND SD(L)-1094, 1 October 1956, in MC 75 (Philip Morse Papers), Box 11, Folder "RAND Corp (10/14)," MIT, p. 1; *Operational Plan: Semiautomatic Ground Environment System for Air Defense*, 7 March 1955, LLAB, p. 19; Lincoln Laboratory Technological Memorandum 20, "A Proposal for Air Defense System Evolution: The Transition Phase," Second Draft, 2 January 12953, LLAB, p. 5. RAND also established a Logistics Division (in 1954) and a Logistics Systems Laboratory. See Murray A.

considered such matters under the purview of the American military was whether an emphasis should be placed on fighting, and winning, a nuclear war or working to preventing it by adjusting to the temper of an atomic world. There was never a shortage of advocates for either position, but at RAND, and elsewhere, the latter, pragmatic and rational, stance was more prominent. While this is undoubtedly a cause for relief, it is not an excuse for the immense limitations of what became known as deterrence theory. Regardless of where one stood, it was impossible to escape the overwhelming prominence of the bomb in American strategy, a presence aided by the shrinkage and redirection of military budgeting after the Second World War, cuts and changes that favoured the "air-atomic offensive."[29]

Though not a uniform philosophical landscape, RAND employees were overwhelmingly committed to what Warren Weaver at an early organizing conference called "the rational life" – the presumption that the world was knowable and manageable. The meeting, attended by many leading academics, was held in New York in September of 1947, and was essentially a recruiting opportunity for the Corporation's new Divisions of Social Science and Economics. But the shared values that Weaver's statement presumed also had a more practical, and ominous aspect: the creation of a "science of war" was RAND's entry in the ongoing competition of disciplinary integration. The

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Geisler, "The Simulation of a Large-Scale Military Activity," *Management Science* 5.4 (1959), pp. 359-368.

[29] F. R. Collbohm, *Project Rand: An Address*, RAND P-707, 1955, RL, p. 2; J. R. Goldstein, *RAND: The History, Operations, and Goals of a Nonprofit Corporation*, RAND P-2236-1, April 1961, RL, p. 2; Herken, *Counsels of War*, pp. 14, 26. See also Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983). These two highly readable works are the standard histories of RAND, and contain much of the detail on individuals and projects I cannot address here. See also David R. Jardini, *Out of the Blue Yonder: The RAND Corporation's Diversification into Social Welfare Research, 1946-1968* (PhD Thesis, Carnegie Mellon University, 1996). A summary of this thesis is Jardini, "Out of the Blue Yonder: How RAND Diversified into Social Welfare Research," *RAND Review* 22.1 (1998), pp. 3-9. The

conference discussions were not limited to RAND's direct responsibilities, but broadly addressed the "identification, measurement, and control of factors" of war, and *winning* this same conflict. Weaver, who was an influential figure in the Rockefeller Foundation's natural sciences sector, where he encouraged the importation of physical science into biology and the study of "organized complexity," also directed the gun control work of Norbert Wiener under the auspices of the wartime Office of Scientific Research and Development. Philip Mirowski calls Weaver the "Grandmaster Cyborg" – less flashy than some of his contemporaries, but the "anonymous entity behind the lines who left his mark on most of the nascent cyborg sciences."[30]

The search for the "deep elements," or the "strategic sense," of an atomic world drew the Yale strategist Bernard Brodie and many other social scientists to RAND at mid-century. Brodie became a leading member of one group of analysts, who employed a familiar brand of historically dependent realist political science. Another set borrowed from RAND's economists (who were separate from the Social Science Division) and physical scientists to present heavily quantitative results. Both sects, however, rarely budged from a "missionary attitude," the typical "RAND style" of dispassionate scholarship and, most importantly, from the attempt to impose order, effectiveness, and a *doctrine* on what appeared to be an unpredictable and irrational set of actions. But it was in the second group that the excitement accompanying new techniques, from operations

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most infamous of RAND strategists, of course, was Herman Kahn, whose *On Thermonuclear War* (1960) was described by a Scientific American reviewer as a "moral tract on mass murder" (Kaplan, p. 228).

[30] U.S. Air Force Project RAND, *Conference of Social Scientists, September 14-19, 1947 – New York*, RAND R-106, June 9, 1948, RL, p. vii, 3; Jardini, *Out of the Blue Yonder*, p. 42; Bowker, "How to Be Universal," p. 109; Philip Mirowski, *Machine Dreams: Economics Becomes a Cyborg Science* (Cambridge: Cambridge University Press, 2002), p. 170; Warren Weaver, "Science and Complexity," *American Scientist* 36 (1948), pp. 536-544; the quote is from p. 536. RAND social scientists also produced some ambitious philosophical work attempting to bridge their field with the natural sciences; for an

research to game theory, proliferated. These techniques appeared to produce tangible results, unlike the interpretative Kremlinology of the 'lesser' social sciences. Operations research, a product of World War II planning rooms, used interdisciplinary teams to determine the most efficient use of technologies, while game theory, notable for its conservatism and pessimism, attempted to rationalize the uncertainty of strategy by predicting an opponent's actions and determining the appropriate response. Game theory at its most arcane involved intensive calculation, but RAND's Math Department also designed "scratch-pad" war games that were played by virtually everyone at the Corporation. By the late 1950s, the terms of game theory had fully infiltrated geopolitical analysis at RAND, resulting in conceptions of risk and calculation that emphasized limiting war to non-nuclear weapons and the testing grounds of third world regions.[31]

Various types of simulations were paramount, however, in the study of nuclear war, an event that could not be completely "field-tested," although the effects of atomic explosions on structures and troops certainly were. The open strategic slate presented by such weapons was a direct challenge to conventions of military knowledge, and thus lent new prominence to civilian strategists who conceived of the bomb as an unconventional tool of war. The new expertise rested in the *avant-garde* at sites such as RAND, theorists

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example, see Olaf Helmer and Nicholas Rescher, "On the Epistemology of the Inexact Sciences," *Management Science* 6.1 (1959), pp. 25-52.

[31] Herken, *Counsels of War*, p. 75-76; Kaplan, *Wizards of Armageddon*, pp. 10, 48, 51-52, 65-66, 121, 198-199; M. G. Wiener, *War Gaming Methodology*, RAND RM-2413, July 10, 1959, RL, p. iii; William Poundstone, *Prisoner's Dilemma: John Von Neumann, Game Theory, and the Puzzle of the Bomb* (New York: Anchor, 1992); Mirowski, *Machine Dreams*. For a summary of OR in the military, see A. W. Boldyreff, ed., " A Decade of Military Operations Research in Perspective – A Symposium," *Operations Research* 8.6 (1960), pp. 788-860. Initially, Bernard Brodie admired the "scientific strategists," although he grew disillusioned with the whole enterprise by the early 1960s. For a cautious endorsement, which discusses the need for "orders of probability and risk," but rejects early game theory, see Bernard Brodie, "Strategy as a Science," *World Politics* 1.4 (July 1949), pp. 467-488; the quote is from p. 479. The most

who were determined to minimize the muddle of "instinct, bias and personality" characteristic of earlier military authority, replacing them with quantification and apparent unconcern. Since, as RAND analysis pointed out, there was no one credentialed in the techniques of nuclear war-fighting, the best way to sift through hypothetical scenarios was by scientifically 'gaming' them. This was one of the major perceived sources of friction between the Santa Monica "modernists" and many of their sponsors in the armed services. And yet, as Sharon Ghamari-Tabrizi has carefully argued, the distinctions were hardly so clear; RAND employees also employed a language of "intuition, insight, discretion and artistry," and they were fully aware of this hypocrisy. The creativity nurtured at RAND enabled investigation of all forms of strategic dilemma and solution, leading directly to the Strangelovian scenarios so commonly associated with the Corporation (and certain individuals working for it).[32] In this respect, strategists assumed the mantle of insight held by the geopolitical theorists discussed in Chapter One.

In the more elaborate simulation games, or "diplomatic exercises," players would adjourn to a special room in the RAND basement, and split into 'Red' and 'Blue' teams (for instance), acting out roles under the watchful eyes of umpires, or managers. These ventures received scorn from many of the corporation's mathematicians and economists, who in turn were criticized for calculations that completely obscured history, geopolitics, and chance. But both factions found audiences for at least some of their work in the divisions of the military, which were slowly adopting operations analysis into its

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thorough study of Brodie's career is Barry H. Steiner, *Bernard Brodie and the Foundations of American Nuclear Strategy* (Lawrence: University Press of Kansas, 1991).

[32] Sharon Ghamari-Tabrizi, "Simulating the Unthinkable: Gaming Future War in the 1950s and 1960s," *Social Studies of Science* 30.2 (April 2000), pp. 163-223; the quotes are from pp. 163, 164, 169. This is the best piece of writing on RAND and simulations currently available, and is quite thorough. However, it is a critical history that does not explore the numerous geographical implications of its subject, or travel far beyond the confines of RAND to the 'outside' spaces that contained systems depended on.

bureaucracy, and, of course, had long ran war games. The RAND exercises, however, were not just tactical, but geopolitical as well, simulations of state behaviour and risks that could add to the understanding of international relations, moving beyond textbooks and lectures into the realm of active learning, and potentially predict "future possibilities and prospects" for American foreign policy. These occupied the practical end of a spectrum that encompassed more theoretical quantifications of political sociology lacking geographical determinants. Interestingly, both camps claimed the high ground of 'realism' (if admittedly partial), but for divergent reasons. All of these dramas, however, de-emphasized outright victory, which made them peculiarly suitable to the Cold War stalemate. Moreover, political exercises could, if necessary, be "global in scope, simulating not only the global political environment but also the detailed interaction of governments on a global scale."[33] Once a typology had been sharpened in the RAND factory, aided financially by the Ford Foundation, it spread to various academic settings, including, notably, MIT's Center for International Studies.

The situatedness of RAND games and gaming proposals was indicated by the assignment of players to certain roles based on their "area expertise." These non-American teams were directed to act realistically, that is, as they believed the

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[33] There are many RAND publications on these games, all available in the Corporation's Library. I will cite widely available sources here. Kaplan, *Wizards of Armageddon*, p. 201; Lincoln P. Bloomfield, "Political Gaming," *U.S. Naval Institute Proceedings* 86.9 (September 1960), pp. 57-64; the quotes are from pp. 57, 58. As Bloomfield noted (p. 58), both German and Japanese strategists had developed cruder versions of such games during the Second World War. His article describes a well-known three-day 1958 game at MIT's Endicott House, in which a crisis was caused by an "anti-regime coup in Poland" (p. 61). See also Lincoln P. Bloomfield and Norman J. Padelford, "Three Experiments in Political Gaming," *American Political Science Review* 53.4 (1959), pp. 1105-1115; Herbert Goldhamer and Hans Speier, "Some Observations on Political Gaming," *World Politics* 12.1 (1959), pp. 71-83. During the 1950s the Naval War College built an impressive, $10 million computerized war game, NEWS (Navy Electronic Warfare Simulator). The NEWS building included "equipment rooms, control rooms, an umpire area and a series of command centers," with a 15-foot "plexiglass master plot screen" providing a "composite picture of the simulated forces, their maneuvers and interactions," in any area of the globe. See "Fabulous 'War Game' Ready," *Naval Aviation News* (January 1959), pp. 16-17; the quotes are from pp. 16, 17.

governments of their states or blocs would under the circumstances. The American group, however, was less constrained. Referees could also disqualify a 'move' for its implausibility, an authority that was radically advanced when computers later assumed the role of umpire. Based on a template devised in 1954, over the course of 1955 and 1956 four games were played at RAND's headquarters; the first two were only a few days in duration, but the third and fourth each lasted about a month, and were played half-time and full-time, respectively. The final game, in April 1956, included three "senior Foreign Service Officers from the Department of State." As in other initiatives that depended on regional awareness, game designers recognized that advances in social scientific theory would sharpen the ability to forecast changes and consequences, but also that *applying* this theory in appropriate ways required finely tuned abilities and assumptions – senses, skills, and speculations that might be made more acute around a map board.[34]

Political games created at RAND were designed to aid the training of military and diplomatic professionals; students were exposed to conditions replicating demands and tensions that they could be expected to encounter in the 'real world'. An equivalent set of concerns was driving another RAND project, one that used similar cartographic technologies, but addressed another zone of the strategic landscape, and did so from a more omniscient point of view. At the time of its development and implementation, SAGE was frequently described as the first "large scale man machine system of its kind,"

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[34] Goldhamer and Speier, "Some Observations," p. 74. As these commentators note (p. 83), future games should include "a few foreign political analysts play[ing] the roles of their own governments so that close consideration of each nation's interest would be increased. (Teams representing Communist governments would be composed of both American and foreign specialists.)" See also Ghamari-Tabrizi, "Simulating the Unthinkable"; John Prados, *Pentagon Games: Wargames and the American Military* (New York: Harper and Row, 1987).

geographically dispersed, made up of complex equipment (including the display facilities), featuring "real-time data flow," and requiring extensive numbers of personnel with a range of technical skills. The specialization of the tasks assigned to these personnel, who were forced to deal with significant "psychological isolation," resulted in a "fractionation of the decision making process." Moreover, the heightened 'role' of computers in the system meant that the human participants suffered from a "feeling of loss of control over the environment."[35] All of these features meant that working SAGE direction centers were not only difficult to construct, but fascinating from the perspective of social science; they were laboratories in which the connection to an exterior space was negotiated, and not just representationally, through the structure of a machine. Both humans and machines, but more importantly, the symbiosis of the two, could be studied as a controlled example of systemic *degradation* – the difference between optimal and operational performance.

John L. Kennedy's "natural habitat" was human engineering and physiological psychology, and thus his work at RAND was not really "straying," as he wrote in 1952, but an expansion of these interests as a result of contact with the mathematicians, physicists, and behavioural scientists who roamed the halls of the Corporation's facility (although the Social Science Division did not fully move from Washington until 1956). All of these thinkers, Kennedy believed, shared an interest in the "complexity of real human affairs," and the methods, "preferably scientific and objective," that were required to predict the behavior not of human individuals or even groups, but of systems that included technological devices as necessary components. Long before the term acquired

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[35] John T. Rowell and Eugene R. Streich, "The Sage System Training Program for the Air Defense Command," *Human Factors* 6.5 (1964), pp. 537-548; the quotes are from pp. 537, 538, 539; Ghamari-

connotations in the parlance of post-structuralism and science studies, Kennedy was referring to these systems as *assemblages* featuring the decidedly irregular interaction of parts. Even mathematics, he believed, would not succeed at grasping these relations, unless it (and all other methodologies used) began with the premise of a "total system," and not just a group of components. New branches of mathematics, such as systems analysis – which added the far less fixed variables of "wisdom" and "common sense" to quantitative models – were, for Kennedy, more successful at this task, in part because they relied heavily on computers. As a result, analysis moved closer in appearance to its subject of study. That said, SRL leaders freely admitted that mistakes and modifications were necessary because the investigation was ambitious and the "terrain [was] not well mapped." The flexibility with which they treated objectivity was apparent in such statements that positioned scientific research as a search, an adventure subject to unexpected events and advanced by hunches and sudden insights.[36] But as long as all of this guesswork, contingency and organic growth was secured within the laboratory bounds (and, it should be added, the adjacent, but integral observation platform), chaos could be averted.

But the impressive size of 1950s computing also meant that a laboratory space was required for synthetic research. In Kennedy's Systems Research Laboratory, first

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Tabrizi, "Simulating the Unthinkable," p. 179.

[36] John L. Kennedy, "The Uses and Limitations of Mathematical Models, Game Theory, and Systems Analysis in Planning and Problem Solution," in John C. Flanagan et al., *Current Trends: Psychology in the World Emergency* (Pittsburgh: University of Pittsburgh Press, 1952), pp. 97-116; the quotes are from pp. 97, 98, 103; Robert L. Chapman, John L. Kennedy, Allen Newell and William C. Biel, "The Systems Research Laboratory's Air Defense Experiments," *Management Science* 5.3 (1959), pp. 250-269; the quote is from p. 250. Whereas operations research sought the best use of a certain technology, systems analysis suggested a 'mission,' and then sought the best equipment for the job. But these missions, and their data, were overwhelmingly speculative, since they had not yet occurred. Both techniques, however, enabled scientists to philosophically justify the Air Force demand for value-driven "*preferred instrumentalities and*

built in the back of a Santa Monica billiard hall, IBM technology controlled input by presenting a set of "complex 'real' problems to the system." This weapon system, like a war game, was a "low order abstraction" of a military conundrum involving humans, machines, and a communications network. The 'nature' of the natural sciences that Kennedy hoped to translate onto human bodies and interactions had been erased, or made technical. As simulations proceeded, the Laboratory itself became a kind of computer, "grinding out the interactions." Raw compilation would, it was hoped, aid the formulation of mathematical models of the interaction. Hypotheses could be sharpened, and returned to the SRL, the site of the "operational test," for further testing and study. SRL exercises were spectacles, complete with rehearsal, script, and "ensemble work." This was a cybernetic form of education – for both participants and observers – that perceived learning, as Norbert Wiener put it, as a type of *feedback.*[37] A familiar language of scientific justification was also prevalent. Yet as in the case of the social sciences discussed in the previous chapter, the abstraction fed into the SRL system carried the traces of geopolitical uncertainty. It was a 'situation' similar to that faced by, or predicted for, actual direction center personnel, and relied on highly speculative information from intelligence estimates.

College students and more experienced military personnel were used as 'crews' in tests that gradually increased the difficulty of tasks, lengthened the duration of experimental periods, and provided knowledge of ongoing results as personnel worked. The replacement of the students from the first simulation, 'Casey' (1952), with Air Force

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techniques." See Kaplan, *Wizards of Armageddon*, pp. 86-87; Goldstein, *RAND*, p. 8; original emphasis; Malcolm W. Hoag, *An Introduction to Systems Analysis*, RAND RM-1678, 18 April 1956, RL.

officers and airmen for the next three – Cowboy, Cobra, and Cogwheel (1953-1954) – proved momentous. A particular culture had been imported into the Laboratory apparently intact, and it was supplemented by the use of Air Force communication styles and methods of address. For Kennedy and his fellow observers, within the Air Force teams of test subjects, the "excitement was obvious," and led to "restless nights and bad dreams." Of course, the laboratory environment was also essential to the training of actual direction center workers. This task, dubbed the System Training Program, rapidly expanded in scale and scope, and a new organization, the System Development Corporation (SDC), was carved off of RAND – and soon dwarfed it – in 1958.[38] The SDC addressed the practical mechanisms of human engineering that escaped the scattered views of high-flying RAND analysts.

By the time of the SDC's incorporation, the Training Program was using an entire air division rather than a single "indoctrination direction center" as a unit, just as the SAGE centers were being integrated into the zones of the continental command known as NORAD. But this expansion had already occurred, at least virtually, at RAND. In the first experiment, Kennedy and his colleagues acted as early-warning stations, 'phoning' information to the direction center crew. But they quickly realized that this scheme was insufficient and inaccurate, and added more *credible* stations operated by one person, followed by even more early-warning reporting facilities with larger crews. In order for one direction center to communicate with the "rest of the world," additional centers were

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[37] Kennedy, "The Uses and Limitations of Mathematical Models," pp. 114, 115; Robert L. Chapman, *Data for Testing a Model of Organizational Behavior*, RAND RM-1916, March 1, 1960, RL, p. 2; Ghamari-Tabrizi, "Simulating the Unthinkable," pp. 181, 182, 186; Prados, *Pentagon Games*, p. 20.
[38] Claude Baum, *The System Builders: The Story of SDC* (Santa Monica: The System Development Corporation, 1981), p. 16.

also added by the time of the Cobra experiment.[39] In the quest for accurate models, networks were broadened, in a manner precisely copied just a few years later during the implementation of SAGE (Figure 13).

Kennedy hoped, in addition, that the SRL could serve as a transitional model bridging the scholarly gap between laboratory and field studies of organizations. The direction center RAND built was compared to equivalent "information-processing centers" such as stock exchanges and weather bureaus, but the final choice was made because the stress-inducing inputs, particularly from radar, could be accurately replicated. RAND's stake in the defence industry was downplayed. Even if the Corporation's Air Force ties were public knowledge, and if experimental crews were explicitly motivated by the language of security and disaster, the argument that SRL research served other organizational environments equally was a means of diminishing particularity. This was a claim reinforced by the steady faith in autonomous science and total systems at RAND (and in the wider sphere of military-funded cybernetics) – a belief that the Air Force could be turned into a domain of rigorous analysis using a language at first accessible only to scientists, but then translated by the same scientist, or a willing representative, into a dialect suited to the military. Inside the Laboratory, a culture could be cultivated and observed, and then classified according to both military typologies and

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[39] Rowell and Streich, "The Sage System Training Program," p. 540; W. Richard Goodwin, "The System Development Corporation and System Training," *The American Psychologist* 12.8 (1957), pp. 524-528; the quote is from p. 526; Chapman et al, "The Systems Research Laboratory's Air Defense Experiments," pp. 253, 257; William C. Biel, *Description of the Air-Defense Experiments: I. The Physical And Cultural Environments*, RAND P-661, RL, p. 3. Once the experiments had been completed, Kennedy and the other SRL leaders dispersed to various corporate and academic posts, where they spread the gospel of simulation under the guise of management and behavioural science. Before departing RAND for Princeton, Kennedy spent the academic year 1954-55 at Stanford's Center for Advanced Study in the Behavioral Sciences, where he worked with Harold Lasswell and others planning "a ten-year program of rapid cultural and technological change," or *development*, in a Peruvian valley. See John L. Kennedy and G. H. Putt,

broader models. What guaranteed a successful transition to field conditions, however, was the perceived accuracy of the constructed space. This was integral not just because the SRL was soon appropriated for the training of actual direction center personnel, but also because the practice of simulation, once firmly bounded, was mobile, and could "go on location," perhaps even to radar sites built in environments that did not resemble downtown Santa Monica.[40] Yet what the RAND researchers failed to fully acknowledge was that the field, both generally and specifically, had been a part of their simulations from the beginning.

A Hostile Nature: Arctic Geopolitics

> From the standpoint of national security, it is essential to know the intimate details of living conditions and of the natural conditions of our own territories.... This last frontier of exploration presents an exciting field not alone in terms of the old geographical exploration, but more in terms of the utilization of our finest and newest techniques in geophysical and biological science applied to a large and vast area of relatively unknown territory.
>
> - M. C. Shelesnyak, Office of Naval Research, 1947 [41]

In January 1949 Isaiah Bowman – distinguished geographer, science advisor, and President Emeritus of John Hopkins University – delivered the opening address at the fifteenth annual meeting of the American Society of Photogrammetry. He spoke on what was surely a popular and pertinent topic – "Geographical Objectives in the Polar

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"Administration of Research in a Research Corporation," *Administrative Science Quarterly* 1.3 (1956), pp. 326-339; the quote is from p. 333.

[40] John L. Kennedy, "A 'Transition-Model' Laboratory for Research on Cultural Change," *Human Organization* 14.3 (1955), pp. 16-18; the quote is from p. 18; Bowker, "How to be Universal," p. 123; Ghamari-Tabrizi, "Simulating the Unthinkable," p. 165; Martin J. Collins, *Planning for Modern War: RAND and the Air Force, 1945-1950* (PhD Thesis, University of Maryland, 1998), p. 19. This thesis has recently been published as *Cold War Laboratory: Rand, the Air Force, and the American State* (Washington: Smithsonian Institution Press, 2002).

[41] M. C. Shelesnyak, *Across the Top of the World: A Discussion of the Arctic* (Washington: Navy Department, August 1947), p. 47. Moses Chiam Shelesnyak was head of the Office of Naval Research's Human Ecology branch after the Second World War, where he was heavily involved in the definition of an Arctic research program. He was also a participant in Exercise Musk-Ox (see below). Shelesnyak left the ONR to become Director of the Baltimore-Washington Branch of the Arctic Institute of North America,

Regions." While typically wide-ranging, Bowman's speech repeatedly returned to the importance of the scientific comprehension of polar environments, particularly the North American Arctic. As Bowman put it, "Survey, survey, and survey may be said to be the three basic requirements of present-day polar research, and we do not restrict the word to cartography." Viewing and traversing the Arctic from multiple perspectives, he added, "will give us better maps or maps where none exist," and the observations produced from this fieldwork would be "an inexhaustible spring of inspiration for the mathematical, physical, and biological syntheses that are the foundations of scientific system and law, that is, constantly improving generalization."[42]

Bowman was no Arctic expert, but his equation of fieldwork with the ability to generalize must have struck a powerful chord with the northern scholars in attendance, as well as with those were generally familiar with the course of recent Arctic science. His speech arrived in the early stages of an extraordinarily intensive period of North American polar research, an era that dated roughly to the beginning of the Second World War. This was a highly coordinated effort that was unprecedented not only in scope but also in geopolitical significance. As *National Geographic* put it typically in 1949, "the Northlands" were still "gradually revealing their secrets to man."[43] The degree of strategic and academic interest in the Arctic increased exponentially during World War Two, when the presence of Americans on projects such as the Alcan (later Alaska) Highway led to discussions of threatened Canadian sovereignty that would not dissipate

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but left under mysterious circumstances relating to an anti-communist investigation, and moved to Israel's Weizmann Institute of Science in 1950.

[42] Isaiah Bowman, "Geographical Objectives in the Polar Regions," *Photogrammetric Engineering* 15 (1949), pp. 6-12; the quotes are from p. 9.

[43] *Index to the National Geographic Society's Map of the Top of the World* (Washington: National Geographic Society, 1949), p. 7. The map was featured in the October 1949 issue. See also "Top of the

with the end of the War. Perhaps the most obvious indication of the shift in attention, as mentioned in Chapter One, was the proliferation of maps oriented towards the North Pole, a pre-war, air-age cartographic style appropriated after 1945 to demonstrate the surprising proximity of the Soviet Union. America was now, in the parlance of the period, "wide open at the top," and had to "push out there for our defense." As the Yale geographer Stephen Jones put it, "Air power and atomic energy have thrown a spotlight on the Arctic regions." Air Force General Hap Arnold was blunter: "If there is a Third World War the strategic center of it will be the North Pole."[44] Just over a year after Bowman's speech, M. C. Shelesnyak of the Office of Naval Research (ONR) drafted a paper titled "The Arctic as a Strategic Scientific Area." A Seminar Series on "Problems of the Arctic" run jointly by the Arctic Institute of North America and the Bowman School of Geography at Johns Hopkins University was the occasion for presentation. His thesis was that "the Arctic region allows for the conduct of scientific research in a manner which permits the securing of objects of a campaign (scientific research) for fuller understanding of natural and social phenomena." Shelesnyak was fond of military imagery in his published descriptions of the ONR's northern research initiatives, but this was a far more direct version. The Arctic, he stated, nurtured scientific research in three respects: it was a *frontier* lacking a "systematic body of scientific data," a simple,

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World: The National Geographic Society's New Map of Northlands," *National Geographic* 96.4 (October 1949), pp. 524-528.

[44] Stephen B. Jones, *The Arctic: Problems and Possibilities* (Memorandum #29) (New Haven: Yale Institute of International Studies, 1948), 1; "America and Polar Geopolitics," *Army Talk* 173 (April 26, 1947), pp. 1-9; the quote is from p. 7; Office of Armed Forces Information and Education, Department of Defense, *The Arctic: A Hot Spot of Free World Defense* (Washington: U.S. Government Printing Office, 1958), p. 3; Susan Schulten, *The Geographical Imagination in America, 1880-1950* (Chicago: University of Chicago Press, 2001). Arnold is quoted in Vilhjalmur Stefansson, "The Arctic," *Air Affairs* 3.2 (1950), pp. 391-402; the quote is on p. 391. On Arctic (social) science and World War Two, see Matthew D. Evenden, "Harold Innis, the Arctic Survey, and the Politics of Social Science During the Second World War," *The Canadian Historical Review* 79.1 (1998), pp. 36-67. On sovereignty, see Shelagh D. Grant,

homogeneous, and contained space ideal for *experimental design*, and a region of profound intellectual *interdependency* that did not allow for closed disciplinary forms of knowledge to survive.[45] Shelesnyak never elaborated on the geopolitical implications of his title, but he did not need to, for they were latent in the paper's substance. Not only was he using an area studies approach to define the arctic as a strategic region, but he was also turning geopolitics into science, thereby effacing the military interests of the ONR in the north.

Locked into the apparent geographic fate of the "long polar watch," Canadians such as the prominent politician (and future Prime Minister) Lester B. Pearson became interested in the Arctic not only for reasons of national and continental defence but also for the advancement of economic development and exploitation. Writing in *Foreign Affairs* in 1953, Pearson heralded the achievements of the cartographers, policemen, missionaries, mechanics and scientists who together had opened a new territory. Pearson and others were waging a campaign to introduce what seemed at first impression to be a distant and forbidding landscape into the popular geographic imaginations of Canadians and Americans, a campaign, tinged with colonial and civilizational rhetoric, which eyed the apparent successes of Soviet enterprise and settlement in Siberia with nervous envy. Scientists and military officials also urged Canadian leaders to capitalize on Canada's "natural advantage" in Arctic research, at least before an American "de facto

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Sovereignty or Security: Government Policy in the Canadian North, 1936-1950 (Vancouver: UBC Press, 1988).

[45] M. C. Shelesnyak, "The Arctic as a Strategic Scientific Area," in Box 137, Folder "AINA: General Papers – Conferences and Seminars – Joint AINA-Isaiah Bowman School of Geography, The Johns Hopkins University Seminar: Problems of the Arctic," Henry B. Collins Papers, National Anthropological Archives, Suitland, MD, p. 4. Other speakers in the series included Collins and Owen Lattimore.

occupation."[46] But notwithstanding the many issue-specific differences between the two governments, and the concerns of the public, especially in Canada, over territorial and legal claims, in the treatment of the Arctic as a Cold War strategic environment moments of synchronicity are equally striking. At the level of diplomacy, the major continental defence initiatives were conducted jointly, without significant rancor, and ultimately designed to form part of an overarching detection-and-response framework, which was the North American Aerospace Defense Command (NORAD).

The same imaginations appealed to by Pearson were also clouded by the threat of disaster. The Arctic was, after all, only a few hours by plane from the industrial heartland of North America. As a result, an alternative vision positioned the north as an empty bulwark separating the superpowers, a vast desert that would challenge the endurance of an invading enemy, or, for that matter, an area that could hide a growing enemy presence for an extended duration. In a 1953 speech Lloyd Berkner captured this process of simultaneous distancing and connection:

> If we can economically exploit the thousands off miles between the distant warning line and our target system, we can acquire real advantage. We can track the enemy to assess his probable intentions and the composition of his forces. We can break up formations over the sea or uninhabited land wastes with atomic weapons.[47]

Rarely mentioned were the repercussions these scenarios would have for the people who had already made the North their home. What *was* constant in post-war discussions was a belief that the north could no longer be ignored scientifically or

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[46] L.B. Pearson, "Canada's Northern Horizon," *Foreign Affairs* 31.4 (1953), pp. 581-591; Melvin Conant, *The Long Polar Watch: Canada and the Defense of North America* (New York: Harper and Brothers, 1962); J. T. Wilson, "Defence Research in the Canadian Arctic (with especial reference to geophysical research)," February 27, 1948, RG 2 (Privy Council Office fonds), Volume 251, File R-100-D (Vol. 4), National Archives of Canada, Ottawa, ON (hereafter NAC). Pearson's efforts were later formalized in Prime Minister John Diefenbaker's "Northern Vision."

[47] "Science and Military Power," October 17, 1953, Box 9, Folder "Editorial Writers – October, 1953," Lloyd V. Berkner Papers, LOC, p. 13.

strategically, and that the geographic object of national defence was now a continental *area* – not just selected landmarks of military or industrial import. The two imperatives of science and strategy fused in the numerous joint operations that transformed the Arctic into a geopolitical laboratory. The *Arctic Circular* – the journal published by the military-dependent Arctic Institute of North America (AINA) – recorded reconnaissance, geodetic and aerial photo operations by the American and Canadian Air Forces, the construction of numerous climate stations, and the investigation of new ice islands for strategic purposes (Figure 14). The United States conducted these and other activities from its massive and strategically crucial base at Thule, on Greenland.[48] Drawing inspiration from the Ethnogeographic Board compilation projects noted in Chapter Two, the AINA assembled a roster of arctic 'experts', as well as an Arctic Bibliography that could be consulted by interested parties.[49] As was so common during the Cold War, the production of 'scientific' knowledge was frequently invoked as a cover for classified military work.

More intriguing, and more secretive, were a series of navy and army exercises, many of them cooperatively planned by the Canadian and American militaries, with names like Sweetbriar, Moccasin, Mukluk, North Star, Yukon, and Eager Beaver that

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[48] *The DEW Line Story* (Western Electric Company, n.d.), p. 2: Kirk H. Stone, "Alaskan Problems and Potentials," *The Journal of Geography* 50.5 (1951), pp. 177-189; Peter J. Schenk, "Problems in Air Defense," *Air University Quarterly Review* 5.2 (1952), pp. 39-53; the quote is from p. 40; Latour, "Give me a Laboratory," p. 166; Sanjay Chaturvedi, *The Polar Regions: A Political Geography* (Chichester, UK: John Wiley and Sons, 1996), p. 83. On climate stations, see Andrew Thomson, "The Growth of Meteorological Knowledge of the Canadian Arctic," *Arctic* 1.1 (1948), pp. 34-43. On ice islands, see Tim Weeks and Ramona Maher, *Ice Island: Polar Science and the Arctic Research Laboratory* (New York: The John Day Company, 1965). Discussed during the war and formed in 1945, AINA launched *Arctic* four years later; see J. Tuzo Wilson, "A Message from the Arctic Institute of North America," *Arctic* 1.1 (1948), p. 3. The Office of Naval Research, Canada's Defence Research Board, and the Carnegie Corporation supported AINA during its early years. See P. D. Baird, "The Arctic Institute of North America," *Polar Record* 8 (January 1956), pp. 22-23.

[49] G. Dudley Smith, "The Arctic Institute Roster Project," *Arctic* 2.1 (1949), pp. 43-44. The Institute was first housed at McGill University in Montreal; later, New York and Washington offices were added.

crisscrossed the north, testing weapons and survival equipment. Their simulated battles were designed to reveal not just the military tactics best suited to specific Arctic spaces, but the hazards and potentials of hostile environments more generally.[50] The striking photographs taken during many of these exercises show the sudden saturation of seemingly empty realms with confident men and impressive machines (Figures 15 and 16). This was, as might be expected, not the entire story. Already the subjects of several infamous scientific experiments and challenging relocation initiatives, native northerners were occasionally enlisted to play 'the enemy', or provide support, in simulated operations. Such enrollment had disastrous consequences on at least one occasion, in February 1952, when 70 residents died of measles near Fort Chimo, Quebec after exposure during Exercise Sun Dog Three. Surveying this disaster, the Canadian Arctic Research Advisory Committee decided "to draw up regulations for future exercises in an attempt to prevent or limit similar outbreaks."[51]

By far the most public of the post-war Northern operations was Exercise Musk-Ox, conducted in the winter and spring of 1946.[52] A convoy of snowmobiles traced a wide, 5,000-kilometer-long northern arc from Fort Churchill, later home to Canada's Defence Research Northern Laboratory, to Edmonton (Figure 17). While certainly motivated by scientific and tactical curiosity, the Canadian and American organizers of the joint project were mainly interested in whether the trip could actually be completed.

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[50] My discussion of these and other arctic exercises must necessarily be brief here, but they will be examined in much greater detail in a future project.

[51] "Minutes of the 2/52 Meeting of the Arctic Research Advisory Committee," 30 May 1952, RG 22 (Department of Indian Affairs and Northern Development fonds), Series A-1-a, Volume 835, File S-84-11-4A, Part 2 ("Arctic Research Advisory Committee – Agenda and Minutes of Meetings"), NAC.

[52] One of the few historical considerations of this intriguing journey is Hugh A. Halliday, Exercise 'Musk Ox': Asserting Sovereignty North of 60," *Canadian Military History* 7.4 (1998), pp. 37-44. For a personal recollection, see Lt.-Colonel Andrew Croft, "Travels in Canada's Northland," *Geographical Magazine* 20.2 (1947), pp. 47-58.

In this respect Musk-Ox shares much with the familiar tradition of conquering extremity 'because it is there', and, indeed, the journals, diaries, and post-trip reports produced by its participants are nothing less than a form of travel literature – if a very dry form.[53] However, Musk-Ox was also representative of a new form of Arctic travel. Well supplied, and supported by military aircraft, which dropped food and even mail, the Musk-Ox group was hardly testing the limits of human endurance, nor was the exercise an individual adventure. Rather, it was a governmental, technological spectacle (notwithstanding the failure of much of the equipment) that reduced the vastness of the Arctic to a legible and traversable range.

Exemplified by the Air Force's Arctic-Desert-Tropic Information Center (ADTIC) at Air University in Alabama, the Cold War study of non-temperate climates was, like debates in Geography at the time, caught between the regional and the universal.[54] It borrowed from earlier colonialist discourses of tropicality to script cartographies of otherness, yet it concurrently sought technological solutions to the deleterious effects of these alien landscapes. Thus the Arctic as a location was at once deeply strategic and profoundly simplified, reduced to a singular area whose environmental constraints, while certainly a challenge to the applicability of scientific and spatial 'laws', could nonetheless be encompassed by them. Environment, in this case, referred to a *category*, so it made sense that agencies such as ADTIC could create

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[53] Thanks are due to Arn Keeling for clarifying this point.

[54] See *Data on Air Forces Activities in Arctic, Desert, and Tropic Zones: Nine School Lectures* (New York: Army Air Forces Tactical Center, Arctic, Desert, and Tropic Information Center, 1944). ADTIC was set up in New York during the Second World War, transferred to Florida, disbanded, and then reestablished in Alabama in 1947. See Paul H. Nesbitt, "A Brief History of the Arctic, Desert, and Tropic Information Center and its Arctic Research Activities," in Herman R. Friis and Shelby G. Bale Jr., eds., *United States Polar Exploration* (Athens: Ohio University Press, 1970), pp. 134-145. In the 1960s, ADTIC went on to conduct research on spacecraft landing areas.

models for typical engagement in *unusual*, non-temperate landscapes, without much more specificity.

The dual climate of the north meant that combat conditions in the summer could be compared to New Guinea or Burma, whereas the Arctic in the winter was almost desert-like – a neat justification for the existence of ADTIC itself. In this military geography, the globe, as one writer from Canada's Defence Research Board (DRB) wrote, was a "mosaic of military regions within which the terrain elements are reasonably homogeneous or have similar diversification of environmental factors relevant to the military problem under consideration."[55] This was the strategic perspective. But the DRB and other organizations, particularly the Arctic Aeromedical Laboratory at Alaska's Ladd Air Force Base, were also interested in the relationship between environment and individual human bodies, a concern that led to numerous physiological and psychological research projects on the technological maintenance of body temperature and normal moods under conditions of extreme cold. As M. C. Shelesnyak observed with respect to the Navy, interest in the "influence of environmental conditions of relatively unknown areas upon man and his *performance* is widespread."[56]

If the question of human interaction with 'nature' is fundamental to geographical scholarship, it is startling that so little attention has been paid to the military dimensions of this relationship – to wars *on* geography. Military geography is now perhaps the most

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[55] Alex J. La Rocque, "The Role of Geography in Military Planning," *The Canadian Geographer* 3 (1953), pp 69-72; the quote is from p. 72; P. H. H. Bryan, "War in the Arctic," *Army Quarterly* 56 (1948), pp. 93-102. On the DRB, see Captain D. J. Goodspeed, *A History of the Defence Research Board of Canada* (Ottawa: Queen's Printer, 1958). The DRB's interest in operations research is articulated in Omond Solandt, "Observation, Experiment, and Measurement in Operations Research," *Journal of the Operations Research Society of America* 3.1 (1955), pp. 1-14. Solandt was the head of the DRB.

[56] M. C. Shelsenyak, " Comments on United States Naval Interests in Geographical Exploration," n.d., Box 12, Folder "Navy Arctic Program – Proposals – 1946-48," M. C. Shelesnyak Papers, National Library of Medicine, Bethesda, MD (hereafter MCS), my emphasis.

moribund and least critical of all the discipline's identified sub-divisions, and continues to treat nature, when not obliterating it in favour of urban scenarios, as an oppositional object, or, more specifically, a force to be overcome. RAND political gaming proposals frequently added Nature as an external factor influencing and disrupting the outcome of a simulation, and conceived of the environment as "the scene of the activity," with all its attendant surfaces and modifications.[57] The concern with hostile environments, or the opposition of nature to culture, is a component of the broader, and ancient, partition of the two categories. All manner of technologies have been understood as aids to the reduction of constraints on travel and behavior. But in terms of actual military operations, and the full range of non-temperate regions, it was only during the Second World War, and the subsequent Cold War, that overcoming environmental constraints on warring bodies became the subject of sustained scholarly study, largely in the laboratories and agencies of the American military. Some of this history has been discussed in previous chapters, with particular reference to the dissection of the world into regions where American forces might have to operate. But there was one location that barely registered in the intellectual landscape of area studies, and that was the North American Arctic.

This is not the place to intervene in the debates over the versions and mythologies of 'north', and what exactly that term might signify.[58] It is clear that in the works of Cold War strategists and scientists a uniform Arctic – which was the preferred term, precisely

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[57] See, for example, A. Winters et al., *Battling the Elements: Weather and Terrain in the Conduct of War* (Baltimore: The Johns Hopkins University Press, 1998); Goldhamer and Speier, "Some Observations," p. 73; J. D. Sartor, *Evaluation of Environmental Effects on Military Operations*, RAND RM-2080, December 21, 1957, RL, p. 3. For an interesting example drawn from Geography, albeit slightly later (not surprisingly), see Peter Gould, "Man Against his Environment: A Game Theoretic Framework," *Annals of the Association of American Geographers* 53 (1963), pp. 290-297.

because of its perceived geographic meaning – was both a wilderness and a space of opportunity. Both of these visions, however, squared with the most consistent impression: that the Arctic was overwhelmingly unknown, and that scientific research reducing this aporia would be a direct aid to military planning. The new intellectual boundaries of Vannevar Bush's 1945 report *Science: The Endless Frontier* were thus echoed, and *territorialized*, in the post-war Arctic. As the geologist and AINA Director Lincoln Washburn argued in 1948,

> in general the fundamental aims of Arctic exploration are purely scientific – to learn more about the North, to solve the many problems that confront us there and which must be solved before we are in a position to describe the North accurately and completely. From this point of view the North differs from no other region; where it does differ is in the fact that we know so little about it compared with most other parts of the world.[59]

By Washburn's definition, northern scientific interventions were necessarily interrelated, and an interdisciplinary, synthetic approach akin to that practiced by the Second World War clearinghouses I have discussed would be far more productive than the admirable, but scientifically negligible, Arctic expeditions of the pre-War period. In the language of period journalism, the Arctic would have to be invaded, or assaulted. The "polar regions," the ADTIC's chief wrote in the preface to a study of survival experiences in the north, "are not to be entered casually or in an unprepared state. The environment presents unique problems not met elsewhere in the world. Constant study and experimentation are needed to adapt machines, materiel, and men to its demands."

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[58] Among a large number of studies on this topic, see Renée Hulan, *Northern Experience and the Myths of Canadian Culture* (Montreal and Kingston: McGill-Queens University Press, 2002).

[59] A. L. Washburn, "Geography and Arctic Lands," in Griffith Taylor, ed., *Geography in the Twentieth Century: A Study of Growth, Fields, Techniques, Aims and Trends*, Third Ed. (New York: The Philosophical Society, 1957), pp. 267-287; the quote is from p. 267. Washburn's chapter was written in 1948. In his popular, romantic account of the post-war Arctic, *The Mysterious North* (New York: Knopf, 1956), Pierre Berton (pp. 7-8) stated that "the north continues to elude us." He also described a comparison of two northern maps, one pre- and one post-World War II, in the Montreal office of the AINA: "The newer map looked like any other northern chart.... But the 1943 map was almost entirely blank, save for a

The cases described in the book, its author went on to note, were rarely the result of contact with a human enemy; the "adversary in these episodes was the environment." But in order to solidify the validity of the Arctic as a scientific and strategic frontier, non-resident 'experts' had to do exactly what historians such as Frederick Jackson Turner did a half-century earlier: take the position of outsiders.[60]

By the mid-1950s, the last semblance of Washburn's idealism had evaporated, as the vision of the north as a potential battleground, as well as the technological construction and research that accompanied it, had taken precedence, subsuming much of the civilian idealism of economic and social development schemes. Of course, these latter projects, like Arctic science, hardly vanished, but they were constantly tied to the logic of militarism. For instance, much of the valuable basic science conducted at the Arctic Research Laboratory at Point Barrow, Alaska, was as far from Cold War imperatives as one can imagine, but it was nonetheless backed by the Office of Naval Research.[61] This was akin to the compilation of knowledge in the regional agencies of

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few wavering dotted lines." On the ground, a sustained tradition of exploration had not diminished the amount of land "waiting to feel the tread of the white man's moccasins."

[60] Leslie Roberts, "The Great Assault on the Arctic," *Harper's* 211.1263 (1955), pp. 37-42; Paul H. Nesbitt, "Preface," in Richard A. Howard, *Down in the North: An Analysis of Survival Experiences in Arctic Areas* (Maxwell AFB, AL: Arctic, Desert, Tropic Information Center, April 1953), p. iii; *Ibid.*, p. 1; Patricia N. Limerick, "The Adventures of the Frontier in the Twentieth Century," in James R. Grossman, ed., *The Frontier in American Culture* (Berkeley: University of California Press, 1994), pp. 66-102.

[61] Laurence Irving, "Arctic Research at Point Barrow, Alaska," *Science* 107.2777 (March 19, 1948), pp. 284-286; M. C. Shelesnyak, "The History of the Arctic Research Laboratory, Point Barrow, Alaska," *Arctic* 1.2 (1948), pp. 97- 106; Evelyn L. Pruitt, "ONR's Geographic Research Program," *Naval Research Reviews* (April 1960), pp. 1-9. In 1949, the National Research Council formed a Committee on Geography that fulfilled an advisory capacity for the Office of Naval Research. This committee existed first in the NRC's Division of Geology and Geography, and, as of 1953, in the Division of Earth Sciences. Members of the Committee included (at various times to 1959) Edward Ullman, J. Russell Whitaker, Donald Hudson, Harold McCarty, Fred Kniffen, Glenn Trewartha, and William Garrison. In 1953, Louis Quam, the head of the ONR's Geography Division, reported that the Navy was "interested in 'basic' geographic studies of all types especially in foreign areas. Within the United States, such proposals should be oriented primarily toward the development of theory and methods with broad applications." This contrast is intriguing, but it is clear that the Arctic fell, first and foremost, into the former category. Arctic research under the ONR purview was handled mainly through the Arctic Institute of North America. See "Minutes of Thirteenth Meeting of the Committee," Folder "Geology and Geography – Committee on Geography:

the Second World War. Who knew what information, what intelligence, might be useful during an Arctic battle, and in the preparations for this conflict?

The ADTIC's approach to survival training had, rather like area studies, moved from a preoccupation with regional experience to a universal psychological condition. During World War Two, the theory went, personnel were trained to survive in the climatic zones they were assigned to; an "aircraft that took off in the Arctic was likely to fly most of its mission over the Arctic." But in the context of a "world-ranging Air Force," in the post-war period less emphasis was placed on geographically specific equipment or advice, and more on the humans (overwhelmingly portrayed as men) who used them. A 1959 survival manual, based on the recommendations of travelers and explorers, presented skills that were valid "regardless of geographic location."[62] While the physical training of bodies was obviously one aspect of this shift, the proper conditioning of minds was even more important. Certain knowledge and ingrained skills were crucial, but as in the case of the post-atomic scenarios described in the next chapter, the key to Cold War survival was a state of calm rationality.

Engineering the North

> The recently disclosed 'Distant Early Warning Line'...almost certainly incorporates more of the lessons of information theory than any other communication system yet devised.
>
> - *Fortune*, December 1953 [63]

The culmination of Northern geopolitical science was the Distant Early Warning Line, an integrated chain of 57 radar and communications stations stretching almost

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Advisory to ONR: Meetings, 1950-1953," National Academy of Sciences-National Research Council Archives, Washington, DC.

[62] "Survival Training in the USAF," *Air University Quarterly Review* 5.4 (Winter 1952-3), pp. 71-84; the quotes are from pp. 71, 75; Paul H. Nesbitt, Alonzo W. Pond, and William H. Allen, *The Survival Book* (Princeton: D. Van Nostrand Co., 1959), p. iii.

5,000 kilometres from northwest Alaska to Baffin Island (Figure 18). The DEW Line had been envisioned since at least 1946, when Army Air Force planners hatched a scheme for a string of radars across the north. But the key impetus, as I have mentioned, was a 1952 'summer study' at MIT; as its final report indicated,

> Our geographical experts have examined northern Canada for sites that would be logistically accessible by means other than aircraft. These sites of the outer DEW Line would form a continuous line along which any aircraft flying at any feasible altitude above the terrain would be in the unimpeded line of sight of at least one station.[64]

It was a *physical* presence, then, that gave the DEW Line its imaginative significance as a political boundary. A series of scattered construction sites became a technological wall, or a set of ramparts, that was also a moral divide, marking the boundaries of security and certainty.

Fixing this boundary in place was very much an act of spatial reasoning. The summer study's director, Jerrold Zacharias, credited participant Lloyd Berkner with the DEW Line argument. As one account has it,

> On being told by a senior Air Force officer that under certain circumstances and jet speeds the warning might not be more than ten minutes, Berkner exploded. "If geography can be made to work that well for the Russians," he retorted, "it can be made to work just as well for us."[65]

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[63] Francis Bello, "The Information Theory," *Fortune* 48.6 (December 1953), pp. 136-141, 149-158; the quote is from p. 136.

[64] Quoted in Thomas Ray, *A History of the DEW Line*, Air Defense Command Historical Study 31 (Maxwell AFB, AL: Air Force Historical Research Agency, n.d.), p. 8. The political history of North American air defence is detailed in Joseph T. Jockel, *No Boundaries Upstairs: Canada, the United States, and the Origins of North American Air Defence, 1945-1958* (Vancouver: UBC Press, 1987). See also Grant, *Sovereignty or Security*, p. 171. A Western Electric executive described the thrill of flying "from one side of the continent to the other and hardly be out of sight of friendly lights, and the signs of habitation of the DEW Line." See W. E. Burke, "The Arctic Distant Warning System," January 29, 1958, in Box 11, Folder "IAS-IRE-RTCA Technical Session, 29 January 1957," Berkner Papers, LOC, p. 22.

[65] See "Dew Line," MC 365, Box 38, Folder 7, MIT, p. 18; Jerrold Zacharias and Myles Gordon, "Military Technology: One of the Lives of Jerrold Zacharias," draft manuscript, October 1, 1986, in MC 31, Box 33, MIT, p. 147. For more on Berkner, see Allan A. Needell, *Science, Cold War and the American State: Lloyd V. Berkner and the Balance of Professional Ideals* (Amsterdam: Harwood Academic, 2000).

Similar conclusions were reached in Project Lamp Light, which was treated as an additional opportunity for consideration of a "more distant, or remote, air battle," and its merits. This led to a practical exercise in the prioritization of target sites and regions – not surprisingly, the northeastern United States finished first – but also a discussion of a "remote zone" between the line of northernmost radar coverage and the fringes of Soviet territory. Pushing this zone further from the American heartland, and extending its dimensions closer to 'enemy' airspace, was the key justification for the incredibly ambitious DEW Line project. The importance of this region was not only due to its status as a potential space of conflict, but also because, as the Lamp Light final report admitted, its existence provided additional "time to think, to consider the situation and to decide on the best action."[66] Geography, then, would work to slow the speed of Cold War conflict, and act as an empty, sealed space in which war could be conducted safely or where rational thought could proceed at a calm rate.

The first summer study, as I have mentioned, was not received positively by its offensively minded sponsors in the Air Force. On the other hand, the National Security Resources Board, an agency with a substantial investment in civil defence, appealed to the National Security Council for a line that would provide maximum time for urban evacuations. According to Zacharias, "only President Truman needed to be persuaded, which is exactly what Albert G. Hill did."[67] By this time, seeking a compromise solution – as well as a slowdown – the Air Force had contracted with Bell Labs and Western Electric to build installations for replicating DEW-like conditions, testing communications equipment, training personnel, and simulating attacks using Air Force

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[66] *Lamp Light*, Volume III, MIT, pp. 12-1, 12-7, 13-1, 13-3; "The Emerging Shield." Kirk Stone wrote Lamp Light's Appendix 13-A, "Characteristics of Proposed Aleutian Radar Sites."

bombers and the insertion of "artificial data" into the tracking system.[68] One group of such stations was on the north coast of Alaska in the vicinity of Barter Island, close to the Navy's Arctic Research Laboratory, and another was in rural Illinois. In tandem with continuing trials carried out at MIT, these experiments negotiated and enabled the political and epistemological transition from controlled laboratory enclosures (and then carefully organized field trials) to a wider set of landscapes in the north – spaces that were, of course, managed in a similar way, but were also more difficult to simplify and rationalize (Figure 19).

It took a further favorable Department of Defense Committee report, and, of course, the testing of a Soviet hydrogen bomb to settle controversies and solidify the networks of support for the DEW Line. President Eisenhower formally approved the DEW project on February 24, 1954, and Canadian consent was subsequently secured. Using maps, hydrographic charts, and Canadian Air Force photographs, in mid-1953 Western Electric had begun low-level overflights of the Arctic to select likely sites. With the aid of a bi-national Air Force Committee versed in operations research techniques, a route was designed that would link up with the existing Alaskan radar network, which in turn was extended into the Pacific though airborne and seaborne radar-carrying craft.[69] In the east, DEW was eventually pushed to Greenland and Iceland, and Navy picket ships carried the line of surveillance to Scotland and south to the Azores. It had already been supplemented on the continent by the more southern Mid-Canada and Pinetree Lines.

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[67] Zacharias and Gordon, "Military Technology," p. 156.
[68] "Projects 572 and 540: Dew Line Engineering Report," Radar Collection, Box 172 06 02, Folder 2, AT&T Archives, Warren, NJ (hereafter AT&T).
[69] Berkner, "Continental Defense"; "First Report of the Location Study Group, Distant Early Warning (DEW) Group," 12 November 1954, RG 24 (Department of National Defence fonds), Series D-1-c, Volume 8159, File 1660-67, Part 1 ("Distant Early Warning and Resupply – Arctic Operations"), NAC. The DEW Line began operating, as scheduled, on July 31, 1957.

Like the original line, these additions were planned very carefully; in all cases, routes were determined by a dizzying combination of reconnaissance, study of aerial photographs and geographic reports, discussions with 'experts', participation in sea re-supply missions through the north, and, not surprisingly, extensive mathematical exercises. But alongside questions of distance and topography, site selection was forced to grapple with a more ambiguous question: which route had the fewest gaps?

The construction of the DEW Line, completed in about two years, was an extraordinary feat of geographical engineering, planned and sequenced in minute detail. As a Canadian journalist put it, the finished product was "a monument to the ingenuity and hardihood of the North America human being." The first popular book-length study of the Line, a romantic and ethnocentric piece of promotion, described the request received by Western Electric to survey a route and assess and solve logistical problems as "probably the greatest single construction order ever issued." 'Geographical engineering' was a term coined by the physicist Edward Teller, in the context of his Project Plowshare (launched in 1957), to describe the physical shaping of the earth to reflect human needs. Through the destructive power of nuclear weapons, he planned to create, among other things, new harbours around the world, including one in Alaska, all in the service of civilization – which of course had a specific meaning for an ardent Cold Warrior like Teller. Such transformations of landscape, minus the nuclear component, were hardly new, as James Scott's work on the modern state and its megaprojects indicates.[70] What was novel about Plowshare – and the DEW Line – was that they were

[70] Ralph Allen, "Will Dewline Cost Canada its Northland?" *Maclean's* 69.11 (May 26, 1956), pp. 16-17, 68-72; the quote is from p. 17; Richard Morenus, *DEW Line: Distant Early Warning: The Miracle of America's First Line of Defense* (New York: Rand McNally and Company, 1957), p. 31; Scott Kirsch and Don Mitchell, "Earth-Moving as the 'Measure of Man': Edward Teller, Geographical Engineering, and the

more ambitious in scope, but also more coordinated, backed by a network of military and civilian organizations woven together using the models of operations research. They were situated at the apogee of a triumphal scientific modernism – visionary, but blindly so. Notably, Plowshare's 'Chariot' initiative in Alaska was protested and eventually defeated, and the DEW Line was made largely obsolete almost immediately by the development of intercontinental ballistic missiles, although this did not stop the United States from replacing it with more advanced versions.

The DEW Line was not, moreover, a simple demonstration of the scientific mastery of nature, or, for that matter, dominance over the existing human geography of the north. As Scott notes, "formal schemes of order are untenable without some elements of the practical knowledge that they tend to dismiss."[71] Climate, of course, was a constant concern. In addition, station sites plotted mathematically from a distance were forced elsewhere due to impossible terrain and the presence of long-standing Inuit settlements – although it is fair to say that the Air Force was not entirely accommodating with the people of the north. The DEW Line agreement itself, pushed on the United States by the Canadian government (in order to secure rights on Canadian soil), stipulated that "The Eskimos of Canada are in a primitive state of social development," and that disruption of their hunting economy and settlements be avoided when at all possible. Well before the DEW legislation, the geographer and Arctic advocate Trevor Lloyd had

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Matter of Progress," *Social Text* 16.1 (1998), pp. 100-134; James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998).

[71] Scott, *Seeing Like a State*, p. 7.

written that Canadians should "see that none of the contemporary military activity in the Arctic is allowed to touch the lives of the Eskimos."[72]

Of course, like the claim that science and defence were two separate (if mutually reinforcing) imperatives in the north, these were simplistic and futile gestures. The building and operation of the DEW Line, as well as other concurrent 'development' initiatives, had tremendous consequences for Inuit across the Arctic, many of whom gained employment, typically in secondary positions, on the Line (Figure 20).[73] All Inuit who resided close to a station, but particularly those who actually worked at stations, were exposed to the replication of an 'American' culture inside station walls – including regular movies, religious services, and cuisine – that was yet another facet of normalization processes. While there was certainly a reciprocal influence of the Inuit on DEW employees from the south, it was clear who the permanent and temporary residents, respectively, were, and whose life-worlds were most significantly altered in the long-term. These consequences were strikingly apparent in a harsh 1957 report composed for the Department of Northern Affairs by a young sociologist on summer assignment, J. D. Ferguson. Inspired by Harold Innis, Ferguson noted the division of native communities by gender, age, and income as a result of the DEW Line's arrival.[74]

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[72] "Agreement between Canada and the United States of America to Govern the Establishment of a Distant Early Warning System in Canadian Territory," May 5, 1955, RG 24, Series D-1-c, Volume 8159, File 1660-67, Part 3, NAC; Trevor Lloyd, "Frontier of Destiny – the Canadian Arctic," *Behind the Headlines* 6.7 (1946), pp. 1-16; the quote is from p. 8. The DEW agreement was reprinted in *The Arctic Circular* 9.2 (1956), p. 23.

[73] Although it is non-academic, the best study of the DEW Line and the Inuit is Kevin McMahon, *Arctic Twilight* (Toronto: James Lorimer, 1988). A 1958 personnel document listed "Eskimo" as a job category; see "Status of Canadian Personnel on the Dewline, Effective: 31 March 1958," RG 24, Acc. 1983-84/167, Box 6592, File 2-70-99-1, Vol. 1 ("Distant Early Warning Line Co-Ordinating Committee – Agenda and Minutes"), NAC.

[74] J. D. Ferguson, *A Study of the Effects of the D.E.W. Line upon the Eskimo of the Western Arctic of Canada* (Ottawa: Northern Research Co-ordination Centre, Department of Northern Affairs and National Resources, April 1957); McMahon, *Arctic Twilight*, pp. 35-36.

The management of life at DEW stations according to certain rituals and techniques of design, or *human* engineering, was a singularly important subject. From the planning phase of the 1952 MIT summer study onward, advocates of the DEW Line were concerned with the behavior of personnel posted to the high Arctic, if only because human alertness was still the ultimate factor determining the Line's potential efficacy. In his "Geographic Studies" appendix to the summer study's final report, Kirk Stone wrote that a "unit in which every man is able to keep busy is essential to morale in the Arctic."[75] In a 1952 statement of support for social research on isolated early-warning stations, the Department of Defense's Research and Development Board noted that the installations posed "rather unique human relations problems along the lines of motivation, team-work and sustained job satisfaction under stressful non-combat conditions." Scholars from the University of Washington conducted the most significant early studies on this subject, reporting to the Air Force's Human Resources Research Institute (HRRI), and developing models of "site efficiency" from field visits. Overall, an Arctic Aeromedical Laboratory staff member wrote, indoctrination for isolated work was a procedure that replaced "fantastic notions" concerning the north with "factual knowledge" of climate, culture, and terrain.[76] Such reassuring, confident dichotomies

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[75] Stone et al., "Geographic Studies," LLAB, p. G-3. An American plan for Line operations listed the many "hardships" accompanying work at Arctic radar posts, but stated that these were offset by "the spirit of adventure or pioneering involved in opening to civilization of an isolated region of the world, the individual contribution to National Defense, and the obvious financial incentives." See "Outline Plan for DEW Line Operation and Maintenance: Land-Based Segment," n.d. [1955], RG 24, Acc. 1883-84/049, Box 105, File 096-100-80/9 Vol. 4, NAC, p. 5.

[76] Raymond V. Bowers, "The Military Establishment," in Paul F. Lazarsfeld et al eds., *The Uses of Sociology* (New York: Basic Books, 1967), pp. 234-274; the quote is from p. 261; Ernest L. McCollum, "The Psychological Aspects of Arctic and Sub-Arctic Living," in Henry B. Collins, ed., *Science in Alaska: Selected Papers of the Alaska Science Conference of the National Academy of Sciences-National Research Council, Washington, November 9-11, 1950* (Washington: The Arctic Institute of North America, June 1952), pp. 254-257; the quotes are from p. 255; *Emergency Living in the Arctic* (New York: Arctic, Desert and Tropic Information Center, Informational Bulletin No. 6, February 1, 1944). Henry Collins was a research associate with the Ethnogeographic Board during the Second World War; while there, he handled

were ubiquitous in the military manuals and studies prepared during the early Cold War. Although there were hierarchies of order and discipline in northern military facilities – or the civilian-military mélanges of the DEW stations – the 'wildness' of Arctic space placed an extra burden on what Michel Foucault called *technologies of the self*, permitting "individuals to effect by their own means, or with the help of others, a certain number of operations on their own bodies and souls, thought, conduct, and way of being."[77]

The changes delivered to the Arctic by the Cold War were quite apparent to the promoters of the DEW Line. As a book published by the Western Electric Company put it, "the DEW Line men are doubly pioneers, they have opened new vistas in electronics as well as geography."[78] But the opening of these vistas was an embodied and contradictory process of natural and cultural engineering that set out to reshape Arctic spaces in the name of security and science. As Canadian Minister of Defence Brooke Claxton waxed in 1948,

> in the camps and laboratories of our north our young men and scientists are experimenting with equipment and instruments and with themselves in an effort to wrest from those limitless spaces knowledge and technique which may be of service to Canada and the rest of humanity.[79]

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all inquiries related to the Arctic. After the war, Collins returned full-time to his position at the Bureau of American Ethnology, and took up a number of positions in the Arctic Institute of North America.

[77] Michel Foucault, "Technologies of the Self," in Paul Rabinow, ed., *Ethics: Subjectivity and Truth, Essential Works of Foucault, Vol. 1* (New York; The New Press, 1997), pp. 223-251; the quote is from 225. Interestingly, there is virtually no mention of women in the literature on the military presence – except instructions not to consort with "Eskimo women." This is not just a function of gendered terminology, but in the substance of scientific research on bodies, moods, and skills – and accords with the preponderance of masculinity in "northern narrative." See Hulan, *Northern Experience*, p. 12.

[78] *The DEW Line Story*, p. 30.

[79] Brooke Claxton, "Armed Forces in Churchill," Speech to the Ottawa Rotary Club, June 14/48, in RG 2, Series B-2, Volume 101, File R-100-D, Part 4 ("Research and Development – Scientific – Defence Research – Arctic and Northern Research"), NAC.

This was the language of heroic masculinity that appeared in praise of scientific initiatives in adverse places across the topographies of the Cold War; notably absent were the much less gallant military imperatives.

Conclusion: Keep Watching

During the development of SAGE, in the belief that existing radar systems were inadequate, Presidents Truman and Eisenhower endorsed a supplementary network of outposts connected to existing Air Force 'filter' centers. This was the extraordinary, if short-lived, Ground Observer Corps (GOC), the army of civilian "skywatchers" who staffed outposts across the continent (Figure 21). The seriousness of this program was always slightly ambiguous. But at its peak, over 400,000 volunteers occupied approximately 17,000 reconnaissance platforms in the United States. Aided by binoculars, and connected by phone to the nearest Air Force stations also occupied by volunteers (who were mostly women), sightings of unfamiliar planes were reported and then plotted on giant table maps in the shape of the appropriate geographic area. The association with the Air Force lent GOC duties a romantic quality that might have blunted boredom, especially for younger participants. But the GOC's official magazine, *The Aircraft Flash*, revealingly recorded the mundane aspects of life that swirled innocuously around watchtowers – "the Miami filter center picnic was a complete success, with over 900 persons enjoying a fried chicken dinner and the entertainment that followed." This was a striking demonstration of the militarization of everyday life during the early Cold War – a phenomenon most commonly associated with civil defence.[80]

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[80] William D. Hobbs, "The History of the Ground Observer Corps," *Aerospace Historian* 27.3 (1980), pp. 178-179, 186; "Flashes," *The Aircraft Flash* 2.1 (1953), p. 6; Laura McEnaney, *Civil Defense Begins at Home: Militarization Meets Everyday Life in the Fifties* (Princeton: Princeton University Press, 2000). A

GOC members did not spot many enemy planes; rather, they did not identify *actual* Soviet planes. Ground observers, radar monitors, and pilots did, however, record numerous sightings of 'unidentified objects', in tandem with the construction of the continental defence network, as well as with a domestic Red Scare. The Cold War flying saucer craze, as Phil Patton notes, began in 1947 (with the first nationally reported sighting two weeks before the infamous Roswell incident) and culminated in the summer of 1952. While directly related to a growing fascination with space exploration, UFOs were also a manifestation of a cybernetic culture obsessed with secrecy and technology. Like the outrageous scenarios of the RAND strategists, they represented the outward edge of a network that strained to pull them back in, replacing reports of Roswell flying discs with stories of mundane weather balloons.

Many of those 'contacted' by extraterrestrials worked on the fringes of the aerospace industries, where scientists and social scientists continued the 'black' tradition of the Manhattan Project by collecting intelligence but also developing objects, under cover of classification, from this knowledge. As Patton points out, the encyclopedic, associational quality of such efforts, soon aided by computers, led to a realm at the edge of an archive or system that was simultaneously a frontier for research and a site of instability or conspiracy.[81] Both metaphorically and literally, this was a profoundly geographic predicament. In constructing systemic 'things' in the shape of atomic bombs, computers, or radar networks, *spaces* were also produced, practiced, and performed.

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similar program was initiated in Alaska in 1942, employing Inuit as scouts – and, later, collectors of radioactive debris from Siberian nuclear testing. See "GOC in Alaska," *The Aircraft Flash* 4.7 (1956), pp. 4-5; *The Arctic: A Hot Spot*, p. 12; Chaturvedi, *The Polar Regions*, p. 98.

[81] Phil Patton, *Dreamland: Travels Inside the Secret World of Roswell and Area 51* (New York: Villard, 1998). Similarly, UFOs also intrigued the members of the controversial Lincoln Summer Study, for technical reasons of defence, but also for the value, positive or negative, of sightings in psychological warfare campaigns. See Needell, *Science, Cold War, and the American State*, p. 306.

These, I have argued, were the Cold War's interwoven laboratories, arctic landscapes, and, ultimately, the continent itself – all environments wherein certainty was sought, but never quite achieved.

Chapter 5 – Anxious Urbanism

> The atomic bomb has raised, in fact, the question of the survival of urban culture itself.
> - Winfield W. Riefler [1]

Introduction: The Return of Containment

In Chapter One I considered the geopolitical term most frequently associated with the Cold War period, a word linked irrevocably to George Kennan's briefly anonymous 1947 *Foreign Affairs* article, "The Sources of Soviet Conduct." *Containment* was part of a discourse that set out the boundaries of the American nation-space, distinguishing an inside from a threatening exterior realm. Of course, the two spheres were not so easily separated. As Homi Bhabha has argued in a discussion of colonialism and nationalism,

> paranoid projections 'outwards' return to haunt and split the place from which they are made.... It is in this space of liminality, in the 'unbearable ordeal of the collapse of certainty', that we encounter once again the narcissistic neuroses of the national discourse.[2]

Neither Bhabha nor the revisionist analysts of Kennan's dogma, however, elaborate on the internal manifestations of the 'splitting' caused by the doubling-back of paranoid political projections – on the *return* of containment to haunt a second, domestic space. In an influential essay, Andrew Ross notes the appropriate distinction:

> The first [conception of containment] speaks to a threat *outside* of the social body, a threat that therefore has to be excluded, or isolated in quarantine, and kept at bay from the domestic body. The second meaning of containment, which speaks to the domestic *contents* of the social body, concerns a threat internal to the host which must then be neutralized by being fully absorbed and thereby neutralized.[3]

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[1] Winfield W. Riefler, "Preface," in Ansley J. Coale, ed., *The Problem of Reducing Vulnerability to Atomic Bombs* (Princeton: Princeton University Press, 1947), pp. vii-xiii; the quote is from p. viii. Dr. Riefler, the Chairman of SSRC's Committee on Social Aspects of Atomic Energy, was affiliated with Princeton's Institute for Advanced Study. Coale's book was prepared for this Committee, which by the time the volume was published had been renamed the Committee on the Social and Economic Aspects of Atomic Energy.

[2] Homi K. Bhabha, "Dissemination: Time, Narrative, and the Margins of the Modern Nation," in his *The Location of Culture* (London, Routledge, 1994), pp. 139-170; the quote is from p. 149. This remark is quite similar to the Stuart Hall comment quoted in the Introduction.

[3] Andrew Ross, "Containing Culture in the Cold War," in his *No Respect: Intellectuals and Popular Culture* (New York: Routledge, 1989), pp. 42-64; the quote is from p. 46. See also A. Nadel, *Containment*

Ross's use of the language of immunology is a deliberate reference to what he calls "the Cold War culture of germophobia," nicely epitomized by Kennan's description of world communism as a "malignant parasite" threatening the reproductive body-spaces of the (feminized) American state and its allies.[4] Containment, therefore, was at once a foreign policy and a narrative of the nation. This symbiotic role was reinforced by Kennan's closing words in "The Sources of Soviet Conduct," where he placed the burden of Cold War moral responsibility upon the American population.

Kennan's imagined national culture, however, was not a homogeneous one. In his 1946 'Long Telegram', the emergent American security state was articulated through a marking of groups most susceptible to communist infiltration, including "labor unions, youth leagues, women's organizations, racial societies, religious societies, social organizations, cultural groups, liberal magazines, publishing houses, etc."[5] These comments, of course, anticipated the imposition of Cold War surveillance programs and the proliferation of hysteric discourses that reached to the very psyche in attempts to resolve doubt over who was real (American) and who was not. The marking of certain groups as un-American not only suggested that they represented a direct internal threat to the national body, but also that they could be geographically contained, placed *against*

Culture: American Narratives, Postmodernism, and the Atomic Age (Durham: Duke University Press, 1995). Of course, 'organic' metaphors have a long and dubious history in geopolitical thought.

[4] Ross, "Containing Culture," p. 45; Frank Costigliola, "'Unceasing Pressure for Penetration': Gender, Pathology, and Emotion in George Kennan's Formation of the Cold War," *The Journal of American History* 83.4 (March 1997), pp. 1309-1339; Heidi Nast, "Unsexy Geographies," *Gender, Place and Culture* 5.2 (1998), pp. 191-206. Cold War germophobia is redolent of a colonialist anxiety over *hygiene*.

[5] George Kennan, "The Long Telegram," in Thomas H. Etzold and John Lewis Gaddis, eds., *Containment: Documents on American Policy and Strategy, 1945-50* (New York: Columbia University Press, 1978), pp. 50-63; the quote is from p. 58.

and outside of a patriotic "heartland geography."[6] Incorporating a remarkable range of identity categories, the articulation of distinction within the boundaries of the state was thus shaped in reference to specific *sites*.

The atomic bomb, according to the influential strategist Bernard Brodie, radically altered the "significance of distance between rival powers," raising "to the first order of importance as a factor of power the precise spatial arrangement of industry and population within each country." While Brodie's arguments date to the period of an American atomic monopoly, they suggestively anticipated the inevitable arrival of a Soviet challenge. His comments also indicate that the risk society symbolically inaugurated by the bomb – "a monster of our own creation," one *Collier's* piece dubbed it – was profoundly geographical.[7] Although the rationality of building and deploying nuclear weapons was immediately, reflexively challenged by some scientific 'experts', these same writers, as well as others who supported American bomb production, clearly inscribed a spatial hierarchy of risk on the American landscape. Many also placed a layer of insurance, in the form of civil defence routines, over the topography of turmoil. This chapter explores such geographies of risk by addressing the *anxious* urban imaginaries stimulated by the Cold War and its defining technological symbol, the atomic bomb.[8]

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[6] See Robert Corber, *In the Name of National Security: Hitchcock, Homophobia, and the Political Construction of Gender in Postwar America* (Durham: Duke University Press, 1993); Frederick M. Dolan, "Cold War Metaphysics," in his *Allegories of America: Narratives, Metaphysics, Politics* (Ithaca: Cornell University Press, 1994), pp. 60-113; Matthew Sparke, "Outsides Inside Patriotism: The Oklahoma Bombing and the Displacement of Heartland Geopolitics," in Gearóid Ó Tuathail and Simon Dalby, eds., *Rethinking Geopolitics* (London: Routledge, 1998), pp. 198-223.

[7] Bernard Brodie, "Military Policy and the Atomic Bomb," *Infantry Journal* 59 (1946), pp. 23-35; the quote is from p. 33; Ulrich Beck, *Risk Society: Towards a New Modernity*, trans. Mark Ritter (London: Sage, 1992); "Hiroshima, U.S.A: Something CAN Be Done About It," *Collier's* (August 5, 1950), pp. 16, 64-69; the quote is from p. 16.

[8] For an excellent, enjoyable study more concerned with the *material* geographies of the Cold War, see Tom Vanderbilt, *Survival City: Adventures Among the Ruins of Atomic America* (Princeton: Princeton Architectural Press, 2002). I reviewed this book in *Environment and Planning D: Society and Space* 21.1 (2003), pp. 127-129.

Beginning with an examination of the distinction scripted between declining central cities and emerging suburbs after the Second World War, I argue that this division produced not only a geography of panic control and spatial containment, but also more thorough proposals to radically alter the material and social fabric of cities in advance of atomic attack. Statements laden with anxiety were thus followed and tempered by equally profound expressions of revised and improved urban order.

W. H. Auden's "baroque eclogue" *The Age of Anxiety* (1947) fixed the United States as the inheritor of European modernism and its troubling contradictions; on another occasion Auden referred to America as a "fully alienated land."[9] Such claims were not unique – nor were they entirely abstract. Musings on American cultural destiny were invariably linked to a developing, singular Cold War antagonism and its domestic geographies. A long-standing modernist ambivalence towards urban spaces was thus coupled, in some cases quite smoothly, with the specificities of American Cold War culture. While inspired by the voluminous bodies of work on post-war urbanism and geopolitics, I am interested in moving between and beyond this literature to consider cities as strategic cultural and political spaces. Transgressing the inside/outside divides of both urban studies and international relations produces a reading of 'anxious urbanism' that is sufficiently wide-ranging. To facilitate this goal, I need to travel across an array of seemingly divergent registers and partially avoid individual urban contexts, focusing instead on the geographies of the *city-as-target*, but it should be quickly apparent that these are generalizations well suited to the discourses discussed.

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[9] See Howard Temperley and Malcolm Bradbury, "War and Cold War," in Bradbury and Temperley, *Introduction to American Studies*, Third Ed. (New York: Addison Wesley Longman, 1998), pp. 242-271; Peter Conrad, *Modern Times, Modern Places: Life & Art in the 20th Century* (London: Thames and Hudson, 1998), p. 517.

One of the great ironies of the post-war United States, as Robert Beauregard has observed, is that its prosperity failed to extend to many of its urban centers. The portent of geopolitical conflict was simply one of numerous factors urging an unprecedented abandonment of central cities by manufacturers, corporations, and populations dominated by the white middle class. Beauregard argues that atomic fear was, ultimately, a minor factor in the process of decentralization.[10] To be sure, no massive state-led campaigns for urban restructuring were mobilized solely in the name of Cold War safety. As many writers of the time were quick to argue, such initiatives would not have suited a time-hardened mythology of American freedom and individualism, especially during a period of increasingly virulent anti-communism.

However, the apparent absence of 'material' changes wrought by decentralization discourses is not an excuse to dismiss the voluminous debates surrounding cities and the bomb in this period, particularly given Beauregard's focus on representation and discourse. It was not simply that there were immediate precedents – in Hiroshima and Nagasaki – for discussions of urban disaster. American cities, as I will show, were sites not only for the geographic articulation of difference, but also for an unprecedented imposition of science and rationality onto urban spaces. For an array of Cold War commentators, 'the city' became a "laboratory of conduct" subject to a spatialization of risk and virtue that spiraled from the subtle and pervasive governmentality of popular journalism and social science to more explicit plans for urban change and design.[11]

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[10] Robert A. Beauregard, *Voices of Decline: The Postwar Fate of U.S. Cities* (Oxford: Blackwell, 1993), p. 58; see also Ann Douglas, "Periodizing the American Century: Modernism, Postmodernism, and Postcolonialism in the Cold War Context," *Modernism/Modernity* 5.3 (1998), pp. 71-98.

[11] Thomas Osborne and Nikolas Rose, "Governing Cities: Notes on the Spatialization of Virtue," *Environment and Planning D: Society and Space* 17 (1999), pp. 737-760; the quote is from p. 740.

Atomic Cities

> The city…had become a bunker of sorts, a Survival City where the reproduction or augmentation of the environment through machinery was viewed not as an emergency measure, but an everyday condition.
>
> - Tom Vanderbilt [12]

The full understanding of the atomic bomb's significance was not reached until after such weapons had been dropped on Hiroshima and Nagasaki, acts that were received, in the United States, with both jubilation and horror. Revealed, according to one commentator, was "the ultimate fact…the final secret of Nature." For General Leslie R. Groves, military head of the Manhattan Project, the bomb and its necessary infrastructure of laboratories, factories and towns "was the apotheosis of modernity and its unspoken ends: progress, practicality, efficiency, the production of things by which, then, power might be accumulated and held." The new world that was just beginning as the Manhattan Engineer District closed on January 1, 1947 was the product of a series of interconnected secret spaces: at Los Alamos, New Mexico; Oak Ridge, Tennessee; and Hanford, Washington. With the close of the District, these places and their complex, contested histories were opened, gradually, to external forces. However, continuing a process that had already begun, "the systems of behavior and belief that guided the actors and participants of the District spread from the sites and spaces as the fences came down…. Atomic spaces interpenetrated, perhaps even became, American spaces."[13]

The relationship between atomic cities and larger geopolitical scales was apparent in a number of respects. Like many of the post-war suburban developments that they preceded, the towns of the Manhattan Project were quickly built, carved into cul-de-sacs

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[12] Vanderbilt, *Survival City*, p. 132.

and neighbourhoods of uniform box housing, and converted from temporary to permanent "scientific-industrial" settlements after the creation and use of the object they were established for.[14] At the beginning of his careful and provocative book *Atomic Spaces*, Peter Bacon Hales includes a photograph of a District officer seated in front of a world map titled "Geography of the Manhattan Project." The map, which demarcates no political boundaries, is pocked with white pins; most are situated within the North American landmass, but others are scattered across the globe. Though the pins mark the particular atomic spaces that Hales sets out to uncover, the map suggests that the geography of the atomic age was also unavoidably global. The utopian planning schemes created for such new communities as Oak Ridge and Hanford – modified by the military necessities and models supplied by Groves, who had heavily influenced the recent construction of the Pentagon – were matched by a global vision of atomic diplomacy and unchallenged American superiority.

A model of uniformity, in turn, was fitted back over the extraordinary diversity of the Manhattan Project's spaces as they were built and operated. Participants from a wide array of educational backgrounds, races, classes, and regions, including a large number of émigré scientists, were homogenized by patriotic doctrines of obligation; regulations; campaigns of silence, secrecy and security; the invention of new spoken, written, symbolic and visual languages; and the local segregation and ordering of space. This was particularly wrenching for a scientific community that envisioned America as

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[13] Quoted in Allan M. Winkler, *Life Under a Cloud: American Anxiety About the Atom* (New York: Oxford University Press, 1993), p. 28; Peter B. Hales, *Atomic Spaces: Living on the Manhattan Project* (Urbana: University of Illinois Press, 1997), pp. 363, 364.

[14] Hanson W. Baldwin, "Los Alamos – Capital of the Atomic Age," *New York Times Magazine* (April 24, 1949), pp. 12-13, 62-65; the quote is from p. 12; "Atom City," *Architectural Forum* 83.4 (October 1945), pp. 103-116; "Model City," *Time* (December 12, 1949), p. 21.

> a place of "everywhere communities" that "floated over time and space"...the forces that impelled modernist science into its new geography also facilitated the creation of twentieth-century American culture, sprawled across great distances and numerous geographical and political boundaries, linked in part by the same technological and cybernetic systems that had held the scientific community together.

Other scientists had to be persuaded forcefully by Project leader J. Robert Oppenheimer to join him at Los Alamos, where they would be isolated in a "beautiful and savage country" and face both travel restrictions and military control of their work.[15]

The anxieties of *social* scientists at the end of the Second World War were captured by the 1945 creation, within the Social Science Research Council (SSRC), of a Committee on the Social Aspects of Atomic Energy. As the implications of atomic technology washed into every corner of intellectual inquiry, this committee was disbanded (in 1947), and its concerns taken up by a multitude of other panels, but not before studies on public opinion and urban vulnerability were generated. Unlike most of the other scientific achievements of the Second World War, after Hiroshima and Nagasaki the bomb was never perceived as just a technological device; its awesome capabilities were as much an incentive for studies in "social nature" as they were an indication that "physical nature" had been mastered. It was also acknowledged that the sheer destructiveness of the bomb, in addition to the unusual conditions of peace-as-war that characterized the Cold War, lent credence to alternative methods of combat, particularly those that struggled with the "inner landscape" of "national and international psyches." Thus while the virtues of the social sciences, and modernity more generally, were certainly called into question by many during the late 1940s and 1950s, a more powerful discourse sought to *reassert* the credentials of expertise, intervention, and

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[15] *Ibid.*, pp. 1-4, 27. Hales is quoting Daniel Boorstin. See also Winkler, *Life Under a Cloud*, p. 16.

enlightenment against the dangers of disaster and negligence.[16] As it did so, the image of America as a defiant bastion of reason was repeatedly presented.

Hiroshima and Nagasaki were central to the remarkable United States Strategic Bombing Survey (USSBS), an initiative that actually began in November of 1944, and considered for a first case study the German landscapes that had been subject to an equally devastating level of destruction, if only of the 'conventional' type. The work of the European Survey was designed to aid the efficiency of ongoing fire-bombing over Japan, and once two atomic bombs had been dropped on August 6 and August 9, 1945, President Truman authorized the formation of the Pacific Survey, which moved in less than a month later to specifically assess the damage wrought by atomic weaponry. But the USSBS was much more than a vehicle for the analysis of city form. German, and, later, Japanese spaces were turned into sites for the collection of evidence and the testing of previously vague theories, a place where the principles and methods of cutting-edge social science could be applied to a definable physical and human geography. Carried back to familiar environs, the results were then modified by a dosage of American spatial and sociological character, and thus made suitable for domestic usage.

Among the components of the USSBS was a Morale Division, headed by the social psychologists Rensis Likert and Angus Campbell, who used probability sampling

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[16] James Capshew, *Psychologists on the March: Science, Practice, and Professional Identity in America, 1929-1969* (Cambridge: Cambridge University Press, 1999), p. 181; Ellen Herman, *The Romance of American Psychology: Political Culture in the Age of Experts* (Berkeley: University of California Press, 1995), pp. 9, 124, 137. Of course, it was not just the atomic bomb that shook faith in science and 'progress'; the Holocaust also produced a deep questioning of rationality and modernity, and was connected to the Cold War, as I noted in Chapter Three, through the themes of totalitarianism and authoritarianism. But at risk of extreme simplification, with this one exception the Holocaust was not a subject that attracted significant and *immediate* interest from a rash of social scientists concerned with *America's* place in the post-war world. Two examples of influential work that fell under the exception are Hannah Arendt, *The Origins of Totalitarianism* (1951) and Theodor Adorno et al., *The Authoritarian*

in Germany to determine the relationship between bombing and behaviour. Others sent to Germany included W. H. Auden and the young political scientist Gabriel Almond. Almond, who had supervised Herbert Marcuse ("then a relatively harmless Hegelian Marxist") briefly at the Office of War Information, was charged with tracing German documents relating to the air war, and with interrogations of interned police or Gestapo "regarding problems of internal order" that resulted as bombing intensified. Much of this information was shared with the Office of Strategic Services, which was interested in similar questions. Almond was dismayed when important papers were treated with only "clinical detachment" by the survey researchers; this, he recalled, was his first exposure to the "mechanization" of social science, a "fanaticism and reductionism" which continued to dog him as he moved into the field of comparative politics in the 1950s.[17] Neither the abstractions of statistics and the experimental method nor the cultural relativism that posited regions as incomparable appealed to him, and, as I have argued in Chapter Three, his Cold War work at Yale and Princeton (and that of others) in modernization, development and political culture was precisely an attempt to hew between these two poles, and justify his route as geopolitically practical.

The Japanese Morale team included Alexander Leighton, the psychiatrist and anthropologist who had also headed the Foreign Morale Analysis Division of the Office of War Information. Leighton, who advised wartime social scientists to seek the "essential oneness of the material in all studies of human behavior and relationships," and

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Personality (1950). Adorno's book, in particular, gestured to an uncomfortable "portrait of American fascism" (Herman, p. 60).

[17] Gabriel Almond, *Ventures in Political Science: Narratives and Reflections* (Boulder: Lynne Rienner, 2002), pp. 9-12; Capshew, *Psychologists on the March*, p. 123. More than fifty years later, Almond (pp. 5, 17) was still able to assert that the 'politics' in political science was "an objective reality and probabilistic in its unfolding," and that modernization theory survived challenges in the 1970s and 1980s ("polemic[s]" he implicitly ties to dissatisfaction with the Cold War) relatively intact.

who also wrote a book on the social conditions in a wartime relocation camp for Japanese-Americans, used his USSBS experience as a springboard to a general discussion of applied social science in his 1949 study *Human Relations in a Changing World.*[18] The audacity of this task bears considering: a truly exceptional field experience, as indicated in Leighton's first-person, travelogue-format introduction and conclusion, was turned into a trial for social science, an extreme but nonetheless manageable challenge to the scientific method. Leighton's fear was that this method would not be properly employed, or that it could not rise to the challenge of urban understanding presented by Hiroshima. But his concern also negotiated the divide between a unique Japanese site and the global, or at least national, atomic 'condition' that was central to anxious *American* urbanism.

As the bomb's 'testing' moved, in a neo-colonial repatriation, from Japan, and then the South Pacific, back to the United States, it shaped at least one more American "boom town" – Las Vegas, located just south of the Atomic Energy Commission's Nevada Test Site (Figure 22). Drawing inspiration from Los Alamos and Hanford, the dual frontiers of science and the geographic West were prolonged in the Nevada desert, an 'empty' space that was "never vacant enough."[19] Cities were brought to these naturalized spaces, in a series of bombing exercises that began during World War Two in Utah's Dugway Proving Ground and culminated in extraordinary tests of atomic

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[18] Alexander H. Leighton, "Training Social Scientists for Post-war Conditions," *Applied Anthropologist* 1.4 (July-September 1942), pp. 25-30; the quote is from p. 25; Leighton, *The Governing of Men: General Principles and Recommendations Based on Experience at a Japanese Relocation Camp* (Princeton: Princeton University Press, 1946); Leighton, *Human Relations in a Changing World: Observations on the Use of the Social Sciences* (New York: Dutton, 1949). For an alternate geographical approach to the USSBS, based on victim testimony, see Kenneth Hewitt, "'When the Great Planes Came and Made Ashes of Our City...': Towards an Oral Geography of the Disasters of War," *Antipode* 26.1 (1994), pp. 1-34

explosions on emblematic suburban housing, complete with mannequins, at the Nevada Test Site.

At Dugway, the German-Jewish architect Eric Mendelsohn, a prominent modernist, created a miniature Berlin suburb with exacting detail. The complex, built with Utah prison labour, was "firebombed and completely reconstructed at least three times between May and September of 1943." Mike Davis cleverly links this into broader debates over Second World War air targeting, and briefly notes the erection of an equivalent Japanese 'village'.[20] But he does not mention the next incarnation of urban construction in the desert: a "survival city" west of Dugway in Nevada's Yucca Flats. In the suitably titled Operation Doorstep, conducted on March 17, 1953, the Atomic Energy Commission (AEC), Department of Defense, and Federal Civil Defense Administration (FCDA) collaborated to stage a small atomic blast in the vicinity of two homes stuffed with mannequins (Figures 23 and 24). The residences were also equipped with basement shelters, and eight outdoor shelters and a "variety of typical passenger cars" dotted the Nevada moonscape. Doorstep was followed on May 5, 1955, by Operation Cue, which included a novel set of civil defence field exercises, from rescue to feeding services, in the wake of the explosion (Figure 25).[21] Both Operations, Laura McEnaney argues, "defined who and what was endangered by the atomic age: families, homes, consumer commodities." But administrators in attendance at the deeply symbolic Nevada tests

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[19] Gladwin Hill, "Atomic Boom Town in the Desert," *New York Times Magazine* (February 11, 1951), p. 14; John M. Findlay, "Atomic Frontier Days: Richland, Washington, and the Modern American West," *Journal of the West* 34.3 (1995), pp. 32-41; the quote is from p. 34.

[20] Mike Davis, "Berlin's Skeleton in Utah's Closet," *Grand Street* 69 (1999), pp. 93-100; the quote is from p. 94. This article is reprinted, with a few changes, in his *Dead Cities* (New York: The New Press, 2002), pp. 65-83.

[21] Federal Civil Defense Administration, *Operation Doorstep* (Washington: U.S. Government Printing Office, 1953); FCDA, *Operation Cue* (Washington: U.S. Government Printing Office, 1955); FCDA, *Cue for Survival* (Washington: U.S. Government Printing Office, 1956); Vanderbilt, *Survival City*, pp. 69-95.

perceived a broader purpose – a contribution to the "general conclusions" for the public "which will apply in the majority of cases under the principle of the 'calculated risk' which is basic to all realistic civil defense planning."[22]

Centre/Suburb

Within Cold War divisions of domestic space, no contrast was more explicit than that between city and suburb – a discrepancy powerfully expressed by George Kennan himself. Kennan's 1950 train journey from Washington to Mexico City convinced him that the American metropolis, regardless of regional variation, was a place of corruption and iniquity. As his train passed through an anonymous urban landscape during a 'sinister dawn', Kennan noted the "desolation of factories and cinder-yards" and the "mute slabs" of skyscrapers. Later, he observed "the grotesque decay" of the St. Louis waterfront – a series of blighted, "indecent skeletons" occupied only by seedy-looking characters. Such language was strikingly similar to that used by W.R. Burnett in his classic 1949 noir novel *The Asphalt Jungle* – made into an equally memorable film one year later by John Huston. Both the film and the novel envision "acres of hard cement" and the hard individuals – mostly men – who inhabit them, a "monstrous, sprawling immensity," that demands death as the price of escape. While extreme, then, Kennan's sentiments were not significantly different from those of a wide range of commentators, including urban luminaries such as Lewis Mumford. Collectively, these authors

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[22] Laura McEnaney, *Civil Defense Begins at Home: Militarization Meets Everyday Life in the Fifties* (Princeton: Princeton University Press, 2000), p. 54; *Operation Doorstep*, p. 3. A 1957 AEC pamphlet issued to residents of the area near the Nevada Test Site were informed that they were in "a very real sense active participants in the Nation's atomic test program," that each test was only conducted due to "national need," and that proper safety concerns were being addressed. See U.S. Atomic Energy Commission, *Atomic Tests in Nevada* (Washington: U.S. Government Printing Office, March 1957), pp. 1, 2, 5.

concluded that post-war cities were declining sites of "social and technological alienation...ringed by expanding centerless suburbs."[23]

For Kennan, and many others, the antithesis of the degraded city was the small, independent farm, but by 1950, this image, like his affection for nineteenth-century diplomatic history, was an anachronism, replaced by the high modernist pastoralism of the post-war suburbs – peripheral, expansive, and largely architecturally, racially, and economically homogeneous. It was these suburban 'citadels' that infiltrated the discourse of Cold War geopolitics: they were the quintessential sites of American life, the spaces where history was being actively rewritten. Suburbs embodied order, safety, and a deeply gendered consumerism that "became as solid a pillar of the United States version of cold war culture as did its remasculinized military."[24] It was no coincidence, then, that when Soviet Premier Nikita Khrushchev proposed a visit to the United States in 1959, President Dwight D. Eisenhower suggested a trip to the paradigmatic suburb, Levittown, whose builder, William Levitt, had remarked upon completion of his creation twelve years earlier that "no man who owns his own house and lot can be a Communist...he has too much to do."[25]

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[23] Kennan is quoted in Guy Oakes, *The Imaginary War: Civil Defense and American Cold War Culture* (New York: Oxford University Press, 1994), pp. 26-28; W. R. Burnett, *The Asphalt Jungle* (London, Zomba Books, 1984), pp. 177, 250; Edward Dimendberg, "From Berlin to Bunker Hill: Urban Space, Late Modernity, and Film Noir in Fritz Lang's and Joseph Losey's *M*," *Wide Angle* 19.4 (1997), pp. 62-93; the quote is from p. 69. On post-war urban decline, see Beauregard, *Voices of Decline*, and Carlo Rotella, *October Cities: The Redevelopment of Urban Literature* (Berkeley: University of California Press, 1998).

[24] Cynthia Enloe, *The Morning After: Sexual Politics at the End of the Cold War* (Berkeley: University of California Press, 1993), p. 16; Kristina Zarlengo, "Civilian Threat, the Suburban Citadel, and Atomic Age American Women," *Signs: Journal of Women in Culture and Society* 24.4 (1999), pp. 925-958; Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1985).

[25] Quoted in Karal Ann Marling, *As Seen On TV: The Visual Culture of Everyday Life in the 1950s* (Cambridge: Harvard University Press, 1994), p. 249. Both the Levittown visit and Khrushchev's desired trip to Disneyland were dismissed for 'security' reasons.

As part of the "intricate national discussion" on city life after the Second World War, Kennan's diagnosis of urban vice echoed a familiar, much older anti-city refrain, but it also acquired additional potency with the invention of the atomic bomb and post-war geopolitical uncertainty.[26] The clearest explication of this development came, in September 1949, from none other than the young Baptist evangelist Billy Graham, orating two days after President Truman publicly announced the first Soviet atomic test:

> Do you know the area that is marked out for the enemy's first bomb? New York! Secondly, Chicago; and thirdly, the city of Los Angeles! We don't know how soon, but we do know this, that right now the grace of God can still save a poor lost sinner.[27]

Salvation, for some families, meant moving – as Washington, D.C. realtors advertised – "beyond the radiation zone" to the suburban developments that were, according to the sociologist William Whyte Jr., becoming "the norm of American aspiration." In the introduction to the 1958 collection *The Exploding Metropolis* – a "book by people who like cities" – Whyte wrote that the American city was "becoming a place of extremes – a place for the very poor, or the very rich, or the slightly odd."[28]

As Whyte's statement attests, central cities were not wholly abandoned, and those who remained behind, in addition to new migrants who either chose to or were forced to settle close to traditional downtowns, were responsible for what in hindsight appear to be some of the defining cultural achievements of the 1940s and 1950s. Abstract expressionist art, bebop, black 'protest' literature and the Beat movement were all urban productions – and, in a different register, so was film noir. At mid-century, however, few of these movements occupied the peaks of American culture. The most successful,

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[26] Beauregard, *Voices of Decline*, p. 3.
[27] Quoted in Paul Boyer, *By the Bomb's Early Light: American Thought and Culture at the Dawn of the Atomic Age* (Chapel Hill: The University of North Carolina Press, 1994 [1985]), p. 239.

abstract expressionism, had, as I noted in Chapter One, been depoliticized and decontextualized.[29] Moreover, the diverse films belatedly classified as noir included many that were, as Norman Klein puts it, "delusional journeys into panic and conservative white flight." Just as the city-mysteries of Poe, Balzac and other sensationalist authors of a century earlier "registered the dreaded rise of the metropolis, film noir registered its decline, accomplishing a demonization and an estrangement from its landscape in advance of its actual abandonment." It was precisely this quest for racial and social distinction that led one *Saturday Evening Post* writer to compare the "human tides...flowing out of the cities" to the "dark tides" that replaced them. "Decay and race," Beauregard argues, "were thrown together in a discursive unity."[30]

Noir's aesthetic conventions were also geographies; films and literature traveled over a terrain of dark, rain-soaked streets, and into seedy bars, diners, and lodgings. In her 1947 journey across the United States, Simone de Beauvoir, an unabashed noir aficionado, described the same landscapes in the terms of non-fiction, with a cinematic reference inserted for good measure:

> American cities are too big. At night their dimensions proliferate; they become jungles where it's easy to lose your way. The second evening we wanted to see *The Killers*...which was playing in an outlying district. We set out on foot in the evening, thinking that after a short walk we'd catch a tram, bus, or taxi. Suddenly, we were on a dark road lined with tracks, unmoving trains, and hangars, crossed now and then by other deserted streets. We were in the heart of town yet in a desert. It began to rain violently,

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[28] "The City Under the Bomb," *Time* (October 12, 1950), p. 12; William Whyte Jr., "Introduction", in Whyte Jr., ed., *The Exploding Metropolis* (Berkeley: University of California Press, 1993 [1958]), pp. 7-19; the quotes are from pp. 8, 9.

[29] Douglas, "Periodizing the American Century"; Rotella, *October Cities*; Serge Guilbaut, *How New York Stole the Idea of Modern Art: Abstract Expressionism, Freedom, and the Cold War*, trans. Arthur Goldhammer (Chicago: University of Chicago Press, 1983).

[30] Norman M. Klein, "Staging Murders: The Social Imaginary, Film, and the City," *Wide Angle* 20.3 (1998), pp. 85-96; the quote is from p. 89; David Reid and Jayne L. Walker, "Strange Pursuit: Cornell Woolrich and the Abandoned City of the Forties," in Joan Copjec, ed., *Shades of Noir* (London: Verso, 1993), pp. 57-96; the quote is from p. 68; Dimendberg, "From Berlin to Bunker Hill," p. 70; Beauregard, *Voices of Decline*, pp. 129, 110; Eric Lott, "The Whiteness of Film Noir," in Mike Hill, ed., *Whiteness: A Critical Reader* (New York: New York University Press, 1997), pp. 81-101.

> and in the wind and rain, we felt as forlorn as on a treeless plain – no shelter, no cars in sight.[31]

The antitheses, in all respects, of the booming suburbs, these noir worlds were occupied, often *minimally*, by an unfortunate cast of characters and, of course, the forces of law who trailed them. In a striking reversal of the Cold War cultural hierarchy of urban places, noir's spatial other was the caricatured suburb. Thus while stories such as Edgar Allan Poe's brilliant and disturbing "The Man in the Crowd" (1840) presented cities as unreadable spaces that concurrently demanded obsessive exploration, noir's urban landscapes are forlorn, quiet places that have "lost that air of pleasurable excitement and possibility," and are instead "traumatized and resigned" following the Depression and then the Second World War. Even the crucial public realm of pre-war hard-boiled authors had given way to an unfocused landscape of creeping blight and moral decline.[32]

As a result, one powerful narrative of post-war American cities was a decidedly ruinous one. They became museum-like places, landscapes best traversed *and exited* by the streaking automobiles that open films like *Double Indemnity* (1944), *Black Angel* (1946), and *Criss Cross* (1949) – machines that signal the importance of post-war highway schemes, the rise of a democratized car culture, and new understandings of dispersed urban spatiality.[33] The personal mobility heralded by many noir films and the

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[31] Simone de Beauvoir, *America Day by Day*, trans. Carol Cosman (Berkeley: University of California Press, 1999), p. 139. De Beauvoir was in the San Francisco area.

[32] Alan Trachtenberg, "The Modernist City of Film Noir: The Case of *Murder, My Sweet*," in Jay Bochner and Justin D. Edwards, eds., *American Modernism Across the Arts* (New York: Peter Lang, 1999), pp. 284-302; the quote is from p. 298; Ralph Willett, *The Naked City: Urban Crime Fiction in the U.S.A.* (Manchester, UK: Manchester University Press, 1996), p. 24; Sean McCann, *Gumshoe America: Hardboiled Crime Fiction and the Rise and Fall of New Deal Liberalism* (Durham: Duke University Press, 2000).

[33] Douglas, "Periodizing the American Century," p. 83; M. Christine Boyer, "Mobility and Modernism in the American City," *Center: A Journal for Architecture in America* 5 (1989), pp. 86-104.

shifting, uncertain identities of their characters was literally facilitated by expanding, endless grids of alleys, arteries, and highways that were not spaces of community but networks of flight and anonymous transience – not just for individuals, but for capital as well. These corridors are often so quiet that to make use of them for any activity but escape, especially at night, is recognizably unorthodox. Their supposedly public nature is privatized by deviant behaviour, whether sexual or criminal, or panic, in the manner of a post-disaster scenario.

Well suited, then, to the urban investigations of noir protagonists, shadowy inner cities fitted smoothly into the detective-like rhetoric of post-war anti-communism. For Senator Joseph McCarthy, a typical public housing project was "a breeding ground for Communists."[34] New arrivals to the country were of particular concern to McCarthy and others. Not only were the political sentiments of immigrants in question, but their habit of settling in cities, according to the respected *New York Times* military correspondent Hanson Baldwin, would increase panic, plague and urban vulnerability immeasurably, particularly because many of them were "depressed and ill." Unrest initiated in such "focal points of infection," Baldwin went on to argue, would be difficult to contain: "hordes of the foreign-born, speaking no English, strangers in their own cities" constituted "a danger to themselves and to all their city neighbors." Writing in *The American Journal of Sociology*, William Ogburn posed a solution to this problem: when a "slum area" in a city was cleared, its footprint should be left barren (Figure 26). Peter Conrad has noted that after Hiroshima, the American city became "the choicest place for

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[34] Quoted in Rosalyn Baxandall and Elizabeth Ewen, *Picture Windows: How the Suburbs Happened* (New York: Basic Books, 2000), p. 91; Nicholas Christopher, *Somewhere in the Night: Film Noir and the American City* (New York: The Free Press, 1997), p. 50.

the destruction of the new bombs because, like those bombs, [it was] the product of energy in destructive excess."[35]

Numerous histories of Cold War culture have outlined the role of the suburban 'nuclear' family as the emergent locus of normality, an archetype that was nowhere more evident than in the burgeoning civil defence program. Film after film, and pamphlet after pamphlet, depicted the rapid reactions of resourceful families who inhabited Levittown-style dwellings; the Federal Civil Defense Administration's *Home Protection Exercises* (1953) was just one example. Though this information frequently depicted woman as particularly industrious, it did so by encouraging mothers "to imagine themselves as warriors in training," as a central part of a Cold War "civic garrison." The comforting base of the family was paralleled, at larger scales, by urban and national imaginaries. All three levels were linked by similar ideals of safety, sovereignty, and fortification. More importantly, however, these nesting scales were universalizing constructions, insensitive to the complexities of American life.[36] The shelter and evacuation programs of the Truman and Eisenhower administration, for instance, were predicated on a middle-class ideal of home and automobile ownership, which encompassed approximately sixty percent of the American population during the 1950s.[37]

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[35] Hanson W. Baldwin, *The Price of Power* (New York: Harper and Brothers, 1947), pp. 256, 257; William F. Ogburn, "Sociology and the Atom," *The American Journal of Sociology* 51.4 (1946), pp. 267-275; the quote is from p. 272; Peter Conrad, *The Art of the City: Views and Versions of New York* (New York, Oxford University Press, 1984), p. 297.

[36] Zarlengo, "Civilian Threat," p. 931; Federal Civil Defense Administration, *Home Protection Exercises* (Washington: U.S. Government Printing Office, 1953). On the 'civic garrison', see Andrew D. Grossman, *Neither Dead nor Red: Civilian Defense and American Political Development During the Early Cold War* (New York: Routledge, 2001).

[37] McEnaney, *Civil Defense Begins at Home*, p. 7; Elaine T. May, *Homeward Bound: American Families in the Cold War Era* (New York: Basic Books, 1988); Kenneth D. Rose, *One Nation Underground: The Fallout Shelter in American Culture* (New York: New York University Press, 2001). For an infamous RAND study on shelters, see Herman Kahn, *Why Shelters?* RAND D-5392 (July 24, 1958), RAND Corporation Library, Santa Monica, CA.

A 1951 article in the *Journal of Social Hygiene* warned that without appropriate awareness and vigilance,

> families would become separated about the consequences of a first strike: normal family and community life would be broken down...there would develop among many people, especially youths...the reckless psychological state often seen following great disasters...moral standards would relax and promiscuity would increase.[38]

A general lack of preparation and awareness was not the only potential cause of such social disorganization, and Kristina Zarlengo is exaggerating when she argues (following Elaine Tyler May) that suburban women and female sexuality represented the most serious threat to national order. There were other peoples and places that produced equal, if not greater, levels of concern from the organs of the security state.

Managing Panic

> Our interest in disasters stems not so much from their spectacular aspects, as from the fact of our growing realization that even the worst events can be brought under some measure of control.
>
> - Lloyd Berkner, 1952 [39]

The anxieties evoked by such complex typologies as film noir, of course, cannot be reduced solely to the atomic bomb. The post-war climate was responsible for "feeding, not breeding" the landscapes of fear, violence and misogyny already present in noir progenitors such as pre-war hardboiled fiction and tabloid street photography. Yet both Jean-Paul Sartre's oft-quoted description of Manhattan as "The Great American Desert" and Albert Camus's noir vision of New York as "a prodigious funeral pyre at midnight" seemed to take on additional valence after Hiroshima and Nagasaki, when the

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[38] Quoted in Elaine Tyler May, "Explosive Issues: Sex, Women, and the Bomb," in Lary May, ed., *Recasting America: Culture and Politics in the Age of Cold War* (Chicago: The University of Chicago Press, 1989), pp. 154-170; the quote is from p. 154.

[39] "The Common Aspects of Disasters," Box 9, Folder "Speeches and Papers – LVB: AAAS Symposium on Disaster Recovery: St. Louis – 12/27/52," Lloyd V. Berkner Papers, Library of Congress Manuscript Division, Washington, DC, p. 7.

fallen American city became a common media image, and even more so after the first Soviet atomic test in 1949.[40] As Paul Boyer has documented, journalists, science fiction authors, religious leaders and concerned scientists all rapidly "transmuted the devastation of Hiroshima into visions of American cities in smoldering ruins," inscribing concentric circles of destruction over various urban topographies (Figure 27). "The clustered buildings and congested areas of our great cities," Hanson Baldwin wrote, "are natural 'area' targets of immense vulnerability for all the mass killers of the age," while the atomic scientist and hydrogen bomb proponent Edward Teller described them as "deathtraps." Even more explicitly, the 'radial' plan or model was likened to "the traditional target in rifle practice."[41]

Virtually all of these imaginative damage maps were centered precisely on the urban core – an extraordinary assumption, given the admitted inaccuracy of such bombing exercises, but also a strategic decision that created zonal models with profound structural and moral repercussions (Figure 28). Whether cities were *primary* targets was not the issue; not only would such discussions potentially reduce interest in civil defence, but the simple fact was that there was no set understanding of when an attack would come, and where it would occur. This uncertainty resulted in contours of risk whose gradients, delimited by an overlapping concatenation of multiple 'indicators', were

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[40] Frank Krutnik, "Something More Than Night: Tales of the *Noir* City," in David B. Clarke, ed., *The Cinematic City* (London: Routledge, 1997), pp. 83-109; the quote is from p. 83. See also M. Christine Boyer, "Crimes in and of the City: The Femme Fatale as Urban Allegory," in Diana Agrest, Patricia Conway, and Leslie Kanes Weisman, eds., *The Sex of Architecture* (New York: Harry N. Abrams, 1996), pp. 97-118. Both Sartre and Camus are quoted in Douglas, "Periodizing the American Century," p. 83. New York was a decidedly noir city for Camus: 'everyone looks like they've stepped out of a B-film'. See Albert Camus, *American Journals*, trans. Hugh Levick (New York: Paragon, 1987), p. 32

[41] Boyer, *By the Bomb's Early Light*, p. 14; Baldwin, *The Price of Power*, p. 252; J. Marshak, E. Teller and L.R. Klein, "Dispersal of Cities and Industries," *Bulletin of the Atomic Scientists* 1.9 (1946), p. 13; Ogburn, "Sociology and the Atom," p. 271. The FCDA admitted that civil defence planning relied to heavily on an

actually shifting constantly, threatening to spill or shift into adjoining districts.[42] Frightening, unfamiliar, and profoundly disruptive, the bomb was an uncanny object, but only properly so when given a *geography*, a place of impact. From this location in time and space, uncertainty and displacement would spread, upsetting conventions of domesticity, homeliness and planned order that are the opposite of the city as ruin. As I outline below, such ambiguity bolstered calls for the spatial independence of new communities from urban centres – familiar demands bolstered by the 'truths' of various novel technologies.

Scholars such as M. Christine Boyer and Edward Dimendberg have noted that noir's 'classic' period corresponded precisely with a time of acute urban transformations in the United States. That noir cities were suitable to the atomic age was a link exploited by the popular media. Reporting on a 1949 Atomic Energy Commission study of the bomb's potential effects on the city of Washington, *Time*, borrowing from a contemporaneous noir 'documentary', dubbed the nation's capital a "naked city"; it passively awaited the arrival of a Russian bomb. The phrasing was apt, since Jules Dassin's 1948 film *Naked City* not only scripted its site (New York) in a manner similar to post-war social science, but it depicted "surveillance and interdiction as natural, organic functions, a form of social self-immunization."[43] This logic was precisely what lay at the heart of efforts to predict, manage, and spatially limit panic through the Cold War civil defence program.

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assumption of "symmetrical behavior of a nuclear burst," but argued that the tactic of concentric circles was "most useful and, in fact, is the most practical basis available for planning." See *Operation Cue*, p. 1.

[42] See Osborne and Rose, "Governing Cities," p. 753.

[43] "Naked City," *Time* (November 28, 1949), p. 66; "The City of Washington and an Atomic Attack," *Bulletin of the Atomic Scientists* 6.1 (1950), pp. 29-30; Kevin McNamara, *Urban Verbs: Arts and Discourses of American Cities* (Stanford: Stanford University Press, 1996), p. 176; Dana Polan, *Power and*

In the best-selling 1946 collection *One World or None*, Philip Morrison, a Manhattan Project physicist who had visited post-war Japan at the request of the War Department, repositioned what he had witnessed to a more recognizable space:

> The streets and buildings of Hiroshima are unfamiliar to Americans. Even from pictures of the damage realization is abstract and remote. A clearer and truer understanding can be gained from thinking of the bomb as falling on a city, among buildings and people, which Americans know well.
>
> ...The device detonated about half a mile in the air, just above the corner of Third Avenue and East 20th Street, near Gramercy Park. Evidently there had been no special target chosen, just Manhattan and its people...the streets were filled with the dead and dying.[44]

What made such scenarios so chilling to American readers was not necessarily the gruesome description of the bomb's victims – since this is what Morrison, John Hersey, and others had reported (however partially) from Japan – but rather the *location* of the destruction, in the middle of a crowded city that was the cultural capital of "the final undamaged citadel of western civilization." Indeed, as E. B. White observed in his 1949 essay *Here is New York*, for the first time, American cities were directly threatened by war, particularly the Empire City, as it possessed "a certain clear priority." White's otherwise exuberant urban homage closed by anticipating the "cold shadow" of planes overhead.[45]

Perhaps the most dramatic representations of atomic disaster were composed by popular periodicals such as *Life*, *Collier's*, *Time*, and *Newsweek* – magazines at the center

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Paranoia: History, Narrative, and the American Cinema, 1940-1950 (New York: Columbia University Press, 1986), pp. 164-165.

[44] P. Morrison, "If the Bomb Gets Out of Hand," in Dexter Masters and Katharine Way, eds., *One World or None: A Report to the Public on the Full Meaning of the Atomic Bomb* (New York, McGraw Hill, 1946), pp. 1-6; the quote is from p. 3. A similarly gruesome New York scenario can be found in David B. Parker, "Mist of Death Over New York," *Reader's Digest* 50.300 (April 1947), pp. 7-10.

[45] Baldwin, *The Price of Power*, p. 5; E. B. White, *Here is New York* (New York: Harper, 1949), p. 54. White's vision, obviously, became an extraordinarily uncanny one on September 11, 2001, one of many Cold War images, structures, and artifacts that suddenly acquired renewed valence long after geopolitical scholars had mapped definitively new post-Cold War topographies. On the long history of September 11, see Mike Davis, "The Flames of New York," in his *Dead Cities*, pp. 1-20.

of the production of popular geopolitics during the early Cold War.[46] Chilling scenarios unfolded in their pages, in some cases well before the United States had lost the atomic monopoly. Borrowing liberally from the doctrines of Air Force General Hap Arnold, the November, 19 1945 issue of *Life* featured a detailed description of a "36-hour war" beginning with the atomic bombardment of Washington, D.C, followed by the "shower of enemy rockets" on twelve other major cities, and an airborne invasion. Despite "apocalyptic destruction" including 40 million deaths, the U.S. wins the stunningly rapid conflict through its overwhelming firepower, and the last illustration depicts American technicians testing rubble in front of the still-standing (and deeply symbolic) lions of the New York Public Library. Not surprisingly, few casualties are depicted in the accompanying illustrations, except a blonde woman sprawled obscenely beside a faceless, cyborg enemy soldier repairing a telephone line.[47]

Life's dramatization was one-upped by the August 5, 1950 issue of *Collier's*, titled "Hiroshima, U.S.A.," and featuring a cover illustration of an atomic bomb detonating over mid-town Manhattan. Inside, accompanied by the lurid, inhuman illustrations of Chesley Bonestell – known for his "views gazing down from a great height upon a city lit by a nuclear fireball" – Associate Editor John Lear fictionalized the incident depicted on the cover.[48] Whereas *Life*'s scenario was predicated upon an

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[46] Another obvious source was *Reader's Digest*; see Joanne P. Sharp, *Condensing the Cold War: Reader's Digest and American Identity* (Minneapolis: University of Minnesota Press, 2000). Of course, another disturbing and occasionally subversive source of imagined disaster was science fiction, worthy of an entirely separate paper. Two prominent (and disparate) examples are Judith Merril's quasi-feminist *Shadow on the Hearth* (1950) and the civil defence consultant Philip Wylie's *Tomorrow!* (1954). See David Dowling, *Fictions of Nuclear Disaster* (London: MacMillan, 1987); David Seed, *American Science Fiction and the Cold war: Literature and Film* (Edinburgh: Edinburgh University Press, 1999).

[47] "The 36-hour War," *Life* (November 19, 1945), pp. 27-35.

[48] Spencer R. Weart, *Nuclear Fear: A History of Images* (Cambridge: Harvard University Press, 1988), p. 236.

anonymous enemy, by 1950 this identity was no longer in question. An accompanying note from the magazine's Editor made clear that Lear's account

> may seem highly imaginative. Actually, little of it is invention. Incidents are related in circumstances identical with or extremely close to those which really happened elsewhere in World War II.... Death and injury were computed by correlating Census Bureau figures on population of particular sections of New York with Atomic Energy Commission and U.S. Strategic Bombing Survey data on the two A-bombs that fell on Japan. Every place and name used is real.
>
> [Lear] interviewed officials of the National Security Resources Board, the Atomic Energy Commission, the Defense Department; experts on nuclear physics, engineering, construction, fire and police methods, traffic, and atomic medicine.[49]

A final example – both more general and more extensive – appeared in the October 27, 1951 issue of *Collier's*, titled "Preview of the War We Do Not Want." An impressive list of masculine literary, military, and political authorities, from Arthur Koestler to Edward R. Murrow, contributed to the detailed production of "Operation Eggnog" – planned "to demonstrate that if The War We Do Not Want is forced upon us, we will win." While the United States-led United Nations force begins by avoiding centres of population, concentrating on "legitimate military targets only," American cities are directly bombed, leading to a retaliatory mission to Moscow witnessed by Murrow, and, ultimately, to the occupation of the Soviet Union. Again, the story featured illustrations by Bonestell, and geometric maps of Chicago and Detroit "under the bomb."[50]

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[49] "The Story of This Story," *Collier's* (August 5, 1950), p. 11. The Federal Civil Defense Administration (FCDA) also used the Bureau of Census to estimate day and night population distribution of city populations, and the various types of urban zones where both habitation and "critical industry occur in highest concentration." See FCDA, *Annual Report for 1951* (Washington: U.S. Government Printing Office, 1952), pp. 47-48; *Population Estimates for Survival Planning* (Washington: Department of Commerce, Bureau of the Census, July 1956).

[50] "Operation Eggnog," *Collier's* (October 27, 1951), p. 6. For a critical discussion of this piece, see D. F. Fleming, "*Collier's* Wins World War III," *The Nation* 173.19 (November 10, 1951), pp. 392-395.

While individually intriguing, these dramatizations and others like them are, more importantly, all productions that mobilized a similar imagination of disaster.[51] In addition to the use of abstract visual representations, they relied upon the selective deployment of *expertise*, particularly in the form of scientific wisdom. Using a curious mixture of graphic and sanitized language, magazines and the experts they consulted produced nuclear fear while simultaneously rationalizing and containing it – a strategy that was central to Cold War civil defence efforts. But containment, as I have argued, was geographically sensitive. "City people," Richard Gerstell wrote in *How to Survive an Atomic Bomb* (1950), "are the ones who have to guard most against panic" (Figure 29). He went on to argue that "if we let prejudice of any kind enter the picture, the result can only make added trouble."[52]

However, a report on morale submitted to the National Security Resources Board (NSRB) less than a month before President Truman transferred civil defence responsibilities to the new FCDA was more blunt. Predicting that "social disorganization" would follow an atomic attack, the authors were particularly concerned by the potential for "tensions" in complex cities such as New York, Chicago, or Detroit: "It is awesome to reflect on what would happen in one of these cities if colored people and white people were forced into close association in shelters, in homes, and even evacuation reception centers." Seeking solutions to such predicaments, *Collier's* sent a

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[51] The standard reference here is Susan Sontag, "The Imagination of Disaster," in her *Against Interpretation and Other Essays* (New York: Farrar, Straus and Giroux, 1967), pp. 209-225. The essay was originally written in 1965. For a more particular (and more interesting) usage, see Mike Davis, *Ecology of Fear: Los Angeles and the Imagination of Disaster* (New York: Metropolitan, 1998).

[52] Oakes, *The Imaginary War*; Weart, *Nuclear Fear*; M. Curry, "In the Wake of Nuclear War – Possible Worlds in an Age of Scientific Expertise," *Environment and Planning D: Society and Space* 3 (1985), pp. 309-321; Richard Gerstell, *How to Survive an Atomic Bomb* (New York: Bantam, 1950), pp. 91, 127; John L. Balderston, Jr. and Gordon W. Hewes, *Atomic Attack: A Manual for Survival* (Culver City, CA: Murray and Gee, 1950).

reporter to Britain's Home Office Civil Defence School, where "A-bomb problems [were] analyzed in realistic detail on a contour map," and where "the model for mob management was India." As Laura McEnaney has explained in her comprehensive survey of civil defence culture, despite the moves toward equality during Second World War mobilization, the racial or class aspects of shelter and evacuation policies were rarely addressed head-on by government officials. Organizations representing labour and African-American constituencies lobbied vigorously to diversify at least the symbolic register of FCDA output, with some success. Yet this did not stop certain negative associations and buried fears from rising to the surface in more reactionary commentaries.[53]

The disciplinary nature of panic and control was best portrayed in an extraordinary 1953 *Collier's* article written by FCDA head Val Peterson. Citing various historical disasters (as well as Orson Welles's infamous 1938 broadcast of 'The War of the Worlds'), Peterson argued that Americans were the most "panic-prone" people on earth. War, he noted, was now pervasive: "Every city is a potential battleground, every citizen a target."[54] But in a continuous state of cold war, constantly maintaining composure was paramount. To determine whether readers were panic-proof, the article included a quiz based on positivist psychological studies carried out by the RAND Corporation, the Institute of Social Research at the University of Michigan, and other bastions of social scientific rationality. These latter surveys were based, in turn, on the extensive testing procedures performed on World War II soldiers – a lineage indicating

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[53] Oakes, *The Imaginary War*, p. 39; "Hiroshima, U.S.A," pp. 66, 67; McEnaney, *Civil Defense Begins at Home*, pp. 149-150.

the deep militarization of everyday life during the early Cold War. In addition, according to Peterson, women were more likely to panic than men. The mood required to participate effectively in the struggle against the Soviet Union was one of masculine level-headedness – precisely the approach practiced by defence intellectuals and nuclear strategists.[55]

As the potency of nuclear weapons increased exponentially with the development of the hydrogen bomb in 1954, options for survival appeared limited to either shelters deep underground or massive evacuation initiatives. While a public shelter system (as opposed to a private one based on individual ability and initiative) was considered excessively expensive, evacuation posed alternate problems. As Peterson thundered in the pages of *Newsweek*, without clearly defined lines of flight from cities, "we'll have uncontrolled mobs moving about our countryside." Like the racial covenants placed on new suburban housing by both the Federal Housing Agency (until they were legally struck down in 1950) and individual developers like William Levitt, the post-disaster infiltration of one community into another – and thus the absence or breakdown of clearly defined 'community' – was, according to the RAND Corporation's study of psychology and civil defence, a key cause of demoralization and disorganization.[56]

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[54] Val Peterson, "Panic: The Ultimate Weapon?" *Collier's* (August 21, 1953), pp. 99-109; the quote is from p. 102, Zarlengo, "Civilian Threat," p. 930-1. On the 'live' frontiers of the Cold War, see Baldwin, *The Price of Power*, p. 155.

[55] McEnaney, *Civil Defense Begins at Home*; Carol Cohn, "Sex and Death in the Rational World of Defense Intellectuals," *Signs: Journal of Women in Culture and Society* 12.4 (1987), pp. 687-718. For one prominent RAND study, see Irving L. Janis, *Air War and Emotional Stress: Psychological Studies of Bombing and Civilian Defense* (New York: McGraw-Hill, 1951).

[56] "The Attack: Every Man for Himself," *Newsweek* (April 5, 1954), p. 33; Janis, *Air War and Emotional Stress*, p. 189. The legacy of covenants, of course, lasted far beyond 1950. On housing development and suburban racism, see Jackson, *Crabgrass Frontier;* Baxandall and Ewen, *Picture Windows*; and Dolores Hayden, *Redesigning the American Dream: The Future of Housing, Work, and Family Life* (New York: Norton, 1984).

The successes of Peterson's campaigns may have ultimately been minimal, but the attention these programs have received from historians is testament to the fecundity of civil defence iconography, spectacle, and propaganda, and the nationalization and normalization of militarism during the early Cold War – as in the case of nuclear strategy. These trends were strikingly apparent in the FCDA's plan for an 'Alert America' convoy, developed in late 1951. A train of vehicles traveled across the United States, visiting selected "target cities," and offering attendees a view of "dramatic visualizations" sketching the extent of atomic danger:

> Through photographs, movies, three-dimensional mock-ups, and scientific action-dioramas they depict the possible uses of atomic energy in both peace and war. Visitors to the exhibits see the damage that could be done to American communities by atomic bombs, nerve gas, and germ warfare. Visitors experience a vivid dramatization of a mock A-bomb attack on their own cities. They learn what they can to through civil defense to protect themselves and the freedoms they cherish.[57]

Disaster Science and City X

> Threat is a pervasive phenomenon. It is an element of much of human experience and observation.
>
> - Steven Withey, Institute for Social Research, University of Michigan, 1957 [58]

Academics and civil defence advocates were particularly concerned with the predicament of panic. The strikingly inaccurate, simplistic, and extremely popular government publication *Survival Under Atomic Attack* (1950) noted in a list of survival

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[57] FCDA, *Annual Report for 1951*, p. 15. The FCDA was also very active in schools, urging a "greater emphasis...on teaching a keen awareness of national dangers and the necessary precautions against them." Elementary school students should understand, among other civil defence-related subjects, "principal target areas and plans for their defense," as well as "effects of nuclear attack or major natural disaster upon our large metropolitan areas." See U.S. Department of Health, Education, and Welfare, Office of Education, *Education for National Survival: A Handbook on Civil Defense for Schools* (Washington: U.S. Government Printing Office, 1956), pp. 1, 42; JoAnne Brown, "'A is for Atom, B is for Bomb': Civil Defense in American Public Education, 1948-1963," *The Journal of American History* 75 (1988), pp. 68-90.

[58] Stephen B. Withey, "Reaction to Uncertain Threat: A Monograph Oriented Towards a Theoretical Organization of Some General Research Findings," October 1957, Folder "Anthropology and Psychology: Disaster Research Group – Studies: Reaction to Uncertain Threat Final Report, 1957," National Academy

tips that "a single rumor might touch off a panic that could cost your life." On a more rigorous level, disaster studies, virtually nonexistent before the Second World War, became an important interdisciplinary subject for numerous post-war research agencies, including (in addition to those listed below) the RAND Corporation and the National Opinion Research Center at the University of Chicago. Drawing inspiration from such precedents as the U.S. Strategic Bombing Survey, and using such recent intellectual innovations as game theory and behavioural modeling, disaster scholars, like many geographers during the same period, pushed for consistent "conceptual schema...general theoretical categories and constructs," with the intention of hauling their subject firmly into the domain of the social sciences.[59] However, the sociological and psychological theory provided by universities and think tanks was one that could also be translated into policy; it was "an operational model for the 'protection' and surveillance of the emotional well-being of the American public."[60]

The National Research Council (NRC) and its partner organization, the National Academy of Sciences, made one of the most substantial bureaucratic investments in civil defence and disaster science, bringing many prominent researchers together on advisory committees within its Division of Anthropology and Psychology to identify suitable approaches and marginalize those that were deemed inappropriate. As in the cases of

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of Sciences-National Research Council Archives, Washington, DC (hereafter NN). No box numbers are used at this repository.

[59] National Security Resources Board, Civil Defense Office, *Survival Under Atomic Attack* (Washington: U.S. Government Printing Office, 1950), p. 17; Lewis M. Killian, Some Accomplishments and Some Needs in Disaster Study," n.d., Folder "Anthropology and Psychology: Committee on Disaster Studies – Conference on Theories of Human Behavior, February 1955," NN, p. 1; Irving L. Janis, "Problems of Theory in the Analysis of Stress Behavior," *The Journal of Social Issues* 10.3 (1954), pp. 12-25; the quote is from p. 12. This issue of the journal was entirely devoted to human behaviour and disaster. See also the series of *Disaster Studies* produced by the National Research Council and the National Academy of Sciences, beginning in 1956.

[60] Grossman, *Neither Dead nor Red*, p. 58.

other interdisciplinary intermediaries I have already discussed, from the Ethnogeographic Board to the Arctic Institute of North America, the NRC produced a roster of personnel equipped to address disaster research – scholars who perceived cities as behavioural spaces. As one Council-Academy report noted, social science could be brought to bear on all aspects of what was called "non-military" or "passive" defence, from the management of facilities (including radar stations) to the sociological and economic recovery that would follow an atomic attack. High-profile research topics included the "psychology of threat," including group and individual problem-solving under conditions of "danger, confusion, isolation, and deprivation," as well as survival studies in "austere environments." Many of the fashionable tools and techniques of Cold War social science, from simulation exercises to systems analysis, were cited as applicable to these inquiries. The intention was to "study the American people in as many disaster situations as possible," extrapolating the results of non-military events, for instance, to account for the unknown dimensions of sudden atomic attack.[61]

That the same methods and themes were equally present in concurrent Arctic or strategic studies, for instance, was no coincidence; they were common to the dilemmas of life in atomic America, behind an unstable 'shield' of security whose breach would have devastating consequences. Similar sponsors were present as well. In the midst of its program in the behavioural sciences, the Ford Foundation also funded the NRC's Committee on Disaster Studies, after initial support from the Army, Navy and Air Force

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[61] *The Adequacy of Government Research Programs in Non-Military Defense: A Report by the Advisory Committee on Civil Defense* (Washington: National Academy of Sciences-National Research Council, 1958), pp. 21, 26; "Proposal for Disaster Studies Program," attached to letter, John R. Wood to M. C. Winternitz, 29 May 1951, Folder "Anthropology and Psychology: Committee on Disaster Studies – beginning of Program, 1951," NN, p. 1; Klaus Knorr, *Passive Defense for Atomic War* (Princeton: Center for International Studies, Memorandum No. 6, October 1, 1954).

medical services had expired. In a 1956 letter to a Ford Foundation representative, Glen Finch, the Executive Secretary of the NRC's Division of Anthropology and Psychology, outlined the major interests pursued by the Committee. In particular, NRC researchers, he wrote, were interested in the "patterns of social interaction and communication before, during, and after disaster," from the dysfunction of panic to the functional development of a "therapeutic community" through solidarity.[62]

If it was not already clear, Finch went on to describe the advantages of disaster study for broader knowledge and theory in the behavioural sciences: not only did the processes examined have a "starting point, a definite concrete event," but a disaster provided an "excellent rationale" for the infiltration of communities in the form of participant observation and interviews. Finally, and most crucially, disasters were both unique and generalizable. They could not be "duplicated in the laboratory," and produced *abnormal* human activity, but were concurrently understood as aberrations from an understandable norm, and were thus relatable to that standard using the same vocabulary.[63]

The FCDA briefed the NRC's Committee on Disaster Studies at the National Civil Defense Training Center in January 1953. FCDA staff presented papers on psychological warfare, medical care, and other "problems," and Committee members were shown a demonstration of an air raid warning system, a mock Rescue Street, and participated in a map exercise on 'City X'. The following year, the Committee produced a statement on the "problem of panic," which set out to delineate the term in order to grasp it objectively: "it is desirable to confine it to highly emotional behavior which is

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[62] Glen Finch to Bernard Berelson, 31 December 1956, Folder "Anthropology and Psychology: Committee on Disaster Studies – Sponsors: Ford Foundation," NN, p. 2.

excited by the presence of an immediate severe threat, and *which results in increasing the danger for the self and for others rather than reducing it.*"[64] While hardly precise, this definition indicated that the central indicator of chaos was the viral spread of irrationality across a collective, often through technological means. It is not surprising, then, that one of the Committee's key members, Irving Janis, later coined the term 'groupthink'.

Scientific analysis of American destruction was typically applied to a hypothetical City X, unless it was necessary to "emphasize certain of the bomb's effects," in which case Washington, D.C. or New York were typically substituted.[65] The FCDA matched this generic scripting with publications like *Battleground U.S.A.* (1957), which outlined the civil defence plans for a "metropolitan target area" whose principal city was Battleground, an inland port in the state of 'E'.[66] While obviously intended to appeal to a wide audience, such constructed urban landscapes were nonetheless dependent on particular visions of spatial order, structure, and priority. There was little doubt, for instance, as to which part of City X would suffer the most grievous wounds, or, put differently, which part was most susceptible to infection.

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[63] *Ibid.*

[64] Committee on Disaster Studies, National Research Council, "Report to the Surgeons General, Departments of the Army, Navy and Air Force," March 31, 1955," Folder "Anthropology and Psychology: Committee on Disaster Studies – Reports to Sponsors: Department of Defense, 1955," NN; "The Problem of Panic," June 1, 1954, Folder "Anthropology and Psychology: Committee on Disaster Studies – Subcommittee on Panic: Problem of Panic, 1954," NN, original emphasis. NRC representatives were also closely in touch with disaster scholars and officials from the RAND Corporation, military branches, the Chemical Corps, the Atomic Energy Commission, Project East River (see below), the Operations Research Office, and University of Michigan's Survey Research Center.

[65] Ralph E. Lapp, "Atomic Bomb Explosions – Effects on an American City," *Bulletin of the Atomic Scientists* 4.2 (1948), pp 49-54; the quote is from p. 49. See also Ralph E. Lapp, "The Defense of Our Cities," *The Reporter* 3.6 (1950), pp. 26-30. Lapp's magnum opus on the subject was *Must We Hide?* (1949). For a mathematical model of targeting and response in Washington, see Richard Bentz et al, *Some Civil Defense Problems in the Nation's Capital Following Widespread Thermonuclear Attack* (Baltimore: Operations Research Office, Johns Hopkins University, November 1956).

[66] Federal Civil Defense Administration, *Battleground U.S.A: An Operations Plan for the Civil Defense of a Metropolitan Target Area* (Washington: U.S. Government Printing Office, 1957).

In addition to its glossy leaflets, films, and exhibits designed for the public, the FCDA pursued a wide range of scholarly approaches to atomic cities. Perhaps the most intriguing angle was captured in a 1953 manual ostensibly produced for municipal organizations titled *Civil Defense Urban Analysis*. This book shared much with concurrent attempts that mobilized the tools and discourse of scientific authority to compile and consider pertinent data on strategic environments. In the case of cities, the FCDA recommended an initial collection of information and the presentation of these statistics cartographically. The maps could then be used to determine the area of maximum human and physical damage, and to simulate an attack, resulting in an accurate quantification of destruction. Scenarios such as this one were the foundation of civil defence planning; operational plans and suitable services could be constructed in response. An urban analysis, then, was a practical procedure, and not just a reference tool for occasional consultation.[67]

To determine the "assumed aiming point," the FCDA urged city officials to select separate maps of "industrial plants and population distribution" and place over them acetate transparencies featuring inscribed concentric circles. Shifting this overlay "experimentally" over the various charts, points could be selected and then transferred to a base representation, preferably titled "Target Analysis Map." A line could be drawn between the two locations and the midway position became the aiming point; the size of a bomb required to destroy the areas around both sites could then be calculated. Similar procedures could be conducted for damage and casualties, or for all of the individual functions of a response unit – resulting in a series of specific maps and one 'master' grid

[67] Federal Civil Defense Administration, Technical Manual 8-1, *Civil Defense Urban Analysis* (Washington: U.S. Government Printing Office, July 1953), p. 5.

of the "overall defense pattern." The aiming point, however, was particularly important, the manual stated, because it was a "logical center for the pattern of civil defense ground organization of the community as a whole." Poor targeting or a related error, of course, could undo all of this plotting, but "in practically all cases," damage could still be addressed easily as a result of the maximal specifications accompanying the choice of a management hub.[68] These remarkably *distant* instructions were accompanied by fitting cartographic examples: maps of blast effects that were *nothing but contours*, and showed no urban detail underneath (Figure 30). The result was a universal geography akin to that produced by the spatial scientists, who were just beginning to occupy positions of prominence in the American academy. And yet, even more than the geometries of the quantitative revolution, the techniques of a *Civil Defense Urban Analysis* were not infinitely mobile.

Other military, academic, and philanthropic agencies were similarly hard at work on disaster scholarship during the first decade of the Cold War. In a study funded and sponsored by the Ford Foundation, the Air Force, and Columbia University's Bureau of Applied Social Research (BASR), Fred Iklé argued that speculating on the social effects of bomb destruction was problematic because "rational planning is 'switched off' at the point of the real nuclear attack." After the explosion, Iklé postulated directly, the opposite took over: "there is nothing but chaos, doom for all humanity, panic, or suicide

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[68] *Ibid.*, pp. 9, 10, 11, 12, 50. "Civil Defense Urban Analysis" was the title of a paper by Milton Towner, an FCDA Education and Training Officer, during the briefing arranged for the NRC's Committee on Disaster Studies in January 1953. Towner described the various diagrams needed for a successful plan, including "isarithmic" maps: "by connecting points of the same numerical value we can draw contour lines, similar to those used by the geographer and in so doing we can know how many casualties to expect in case the center of damage appears at any point on or near any contour line." See "Fifth Meeting, Committee on Disaster Studies, Division of Anthropology and Psychology, National Research Council, in Cooperation with Federal Civil Defense Administration," January 9-10, 1953, Folder "Anthropology and Psychology: Committee on Disaster Studies – Meetings 1952-1957," NN, p. 11.

– and immediate defeat or immediate victory." His dichotomy between rational and irrational time also had a spatial equivalent. Gesturing vaguely toward both the Chicago school of sociology and its subsequent Parsonian manifestations, Iklé summoned a functional-ecological model of urban life, arguing that a disaster would upset networks of quantitative 'relations', "leaving tangible effects in the form of readjustments and measurable discrepancies." Iklé's city, in keeping not only with 1950s social science, but also with concurrent geopolitical rhetoric, was an abstraction suited to equilibrium; it would readjust "to destruction somewhat as a living organism responds to injury."[69] And readjustment, as FCDA leaders repeatedly emphasized, was a matter of systemic coordination.

BASR scholars have been widely credited with promoting a budding post-war quantitative sociology, but they were also, as I noted in Chapter Three, active in the integration of social science and military intelligence. Beginning in 1950 several of them joined with researchers from the University of Chicago on an Urban Targets Research project sponsored by the Air Force's Human Resources Research Institute (HRRI). While Chicago investigators studied the "sociological and psychological components of intra-urban target analysis," combining the spatial and temporal patterns of their home city to form a "framework for target selection," BASR researchers led by Kingsley Davis considered "inter-urban patterns of target complexes."[70] The data accumulated and

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[69] Fred C. Iklé, *The Social Impact of Bomb Destruction* (Norman: University of Oklahoma Press, 1958), pp. vii, 7, 8. Identical views can be found in an earlier piece: see Fred C. Iklé, "The Social Versus the Physical Effects from Nuclear Bombing," *The Scientific Monthly* 78.3 (1954), pp. 182-187. His speculations on atomic destruction were drawn from earlier work on German cities of the Second World War, also conducted at the BASR; see "The Effect of War Destruction upon the Ecology of Cities," *Social Forces* 29.4 (1951), pp. 383-391. In a later incarnation, Iklé was Undersecretary of Defense for Policy in the Reagan Administration, and more recently served on the Pentagon's Defense Policy Board.

[70] See *Report*, Strategic Intelligence Research Directorate, Human Resources Research Institute, Air University, 30 November 1951, Box 24, Bureau of Applied Social Research Papers, Columbia University

models prepared for these studies were valuable for defensive planning, of course, but their appeal was both broader and more flexible – nothing less than the improvement and centralization of information on cities at a *global* scale. According to the BASR contribution to a 1951 HRRI report, the selection of data for inclusion in the "Urban Resources Index," made from the dual but compatible standpoints of military intelligence and "economic, political, sociological, and social psychological analyses," would "facilitate systematic comparative analyses for strategic scientific purposes."[71] Translated, this meant that the creation of such an index was perfectly designed to suit Cold War operations, since these could hypothetically include any city on Earth – as a battleground or a site for strategic bombing.

Under the auspices of a research group for "operational analysis and field study of disaster problems," National Research Council consultants were heavily involved in more visceral forms of simulation, notably a series of evacuation tests held in 1954. With the construction of the DEW Line, it was hoped that advance-warning times would be significantly increased, and that evacuation, especially in smaller cities, would become distinctly feasible. Three cities participated: Mobile, Alabama, and Spokane and Bremerton, both in Washington. Operation Rideout, a dispersal of Bremerton's population by car and ferry that generated significant advance publicity, featured the participation of the University of Washington geographer William Garrison, a leader of

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Rare Book and Manuscript Library (hereafter BASR). On BASR and post-war social research, see, in particular, Jean M. Converse, *Survey Research in the United States: Roots and Emergence, 1890-1960* (Berkeley: University of California Press, 1987). Davis became head of the Bureau in 1949; other members of its Board of Governors included former Ethnogeographic chief William Duncan Strong and Russian Institute stalwart Philip Mosely. See the material in Box 47, Folder "Bureau of Applied Social Research 1951," Part One, William Duncan Strong Papers, National Anthropological Archives, Suitland, MD.

[71] "Inter-urban patterns of target complexes," in *Report*, Strategic Intelligence Research Directorate, BASR, p. 4.

Geography's quantitative revolution. In a memo to an NRC Disaster Studies Committee member, Garrison mentioned that his "observation team" had recommended the use of aerial photography and a "Time-Space Car Tracking Plan" to Washington civil defence leaders. His suggestions must have impressed these officials, since he and a team of graduate students were soon enlisted to conduct research for the state's 1956 *Survival Plan.*[72] It is not surprising that spatial science was compatible with civil defence. Urban evacuation's lines of flight and the systemic grids of emergency response represented a rational ideal, but also a refined *unreality* of abstraction.

The FCDA chose Spokane because it displayed a compact structure and a proximity to "open country," which combined to create a "suitable laboratory." To lend this exercise, Operation Walkout, greater drama (or 'realism'),

> National Guardsmen were posted at street corners; emergency civil defense and military vehicles moved on the streets; anti-aircraft and machine gunner fired their weapons from the roof tops of several buildings; jet fighter planes and bombers flew over the area.... At 10a.m., to simulate an attack, a bomber dropped leaflets over the city, saying "This might have been an H-bomb." The bomber missed the target area, and the pamphlets fell on an outlying residential district near one of the theoretical evacuation zones.[73]

The results of Operation Scat, a "drive out" evacuation of a Mobile neighbourhood, were even more fascinating. There, researchers encountered

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[72] "Committee on Disaster Studies, Division of Anthropology and Psychology, Annual Report, 1952-1953," Folder "Anthropology and Psychology: Committee on Disaster Studies – Reports: Annual, 1952-57," NN; Memo, William Garrison et al. to Harry B. Williams, n.d., Folder "Anthropology and Psychology: Disaster Research Group – Studies: Civil Defense Evacuation Test – Bremerton: Final Report, 1955," NN, p. 1; *Washington State Survival Plan Studies*, Volume 2 (Seattle: University of Washington, 1956). Along with a professor of Sanitary Engineering, Garrison and Marion Marts led the Survival Plan research team; Brian Berry, Duane Marble, Richard Morrill, and John Nystuen, among others, assisted them.

[73] Memo, John Balloch et al. to National Research Council, Committee on Disaster Studies, Subject: Spokane Civil Defence Exercise "Operation Walk-Out, April 26, 1954," n.d., Folder "Anthropology and Psychology: Disaster Research Group – Studies: Civil Defense Evacuation Test – Bremerton: Final Report, 1955," NN, p. 3. As observers at another FCDA Operation (in 1955) wrote, the exercise was "not a single game, but a complex series of games within games." See "Operation Alert 1955: observation sand Comments on Human Factors at Low Point," n.d., Folder "Anthropology and Psychology: Disaster Research Group – Studies: Operation Alert – 1955 Evaluation: Final Report," NN, p. 6.

demographic complexity and inequalities not apparent in Spokane. According to an anonymous report, most of the evacuees "were Negro," without private transportation, and demonstrated an "outstanding...conformity to the demands of the (white) authority." Due to poor communication, however, a rumor spread "that a real atomic bomb was going to be dropped on Mobile," and some voiced the fear that this was occurring to avoid school desegregation. The legitimacy of the report is less important than the indication that actual simulations and their environments were significantly removed from the clean maps of mathematical analysis. As one of the Council's representatives in Mobile noted frankly, almost every conceivable American urban target was populated by "lower class and lower middle class people, who in large part represent minority groups" – groups that were seen to be markedly *different* from "community leaders," and "not reached by the usual mass communication media." Another observer gained the impression after speaking with a white policeman that under conditions of disaster racial divides might be partly breached, but only to the extent that black citizens would be picked up by white car-owners "after all the whites in the area had already been evacuated."[74]

The most intriguing combination of urbanism, science and strategy was the comprehensive and influential Project East River, completed for the FCDA by a group of academic institutions known as Associated Universities, Inc., in 1952. Another one of the numerous 'summer studies' affiliated with the Massachusetts Institute of Technology, East River not only demonstrated the importance of behaviouralist social science to the

[74] "A Report on 'Operation Scat': A 'drive out' Evacuation of a part of Mobile, Alabama," n.d., *Ibid*, pp. 1, 2, 4; "Report on Observation Scat – Participant Observer, 'S'," n.d., *Ibid.*, p. 6. The NRC-NAS Committee on Disaster Studies was abolished in July 1957, but the practical work of the Disaster Research Group continued.

military bureaucracy, but it also echoed the mantra that fear could be *channeled* through a combination of training, emotion management, and self-surveillance. East River's diverse and authoritative cast (including a retired General, the study's Director) detected precisely what was wrong with American society, and what could thus doom (Western) civilization: an "apathetic attitude" indicative of "individuals, institutions, and nations that have perished in the past because of the inability or unwillingness to adjust to major environmental changes." These changes, the ten-part East River report made clear, were at once national and urban, shifts motivated by both technological progress and geopolitical circumstance. And the link to American cities was quite apparent: Part Five of the report, "Reduction of Urban Vulnerability," began with the assertion that "to keep pace with weapons development, it is essential to make urban targets less remunerative."[75] One response was to join in the widespread call for urban dispersal.

In addition, although Project East River was not expected to actually conduct tests, experiments or exercises to create new data, and was instead intended as a suitable forum for synthesis of prior research and opinion, it did make one partial exception to this imperative – a "selected area study" that formed Appendix V-A of the report. There, East River participants, after deciding that "a typical American city did not exist for our purposes," borrowed from a recent disaster review that had been produced under the aegis of two New York hospitals, the Rockefeller Institute, City and Suburban Homes, Inc., and the New York Life Insurance Company. This collective of risk-related agencies

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[75] Grossman, *Neither Dead nor Red*, pp. 59-60; "Second Press Release," in *Report of the Project East River*, Part One (New York: Associated Universities, Inc., 1952), n.p.; *Reduction of Urban Vulnerability: Part V of the Project East River* (New York: Associated Universities, Inc., July 1952), p. 1. Public apathy relating to civil defence was a common complaint; in the first annual report of the FCDA, Administrator Millard Caldwell complained to President Truman that too few Americans "realize that the atomic bomb changed the character of warfare and that in future conflicts the man and woman on the street and in the

conducted detailed land use and population studies of 47 Manhattan blocks, and then proceeded to simulate the dropping of atomic bombs over this space, varying the location and height of the bombs, as well as the number and position of shelters (Figure 31). The results of this study, in the form of large tables, were predictable and sanitized, facilitating an easy translation from the detailed topography of New York to "many of the features found in our larger cities" – or generic illustrations of threatened areas.[76]

Dispersal and Decentralization

One problem with America's largest cities, William Borden pointed out in *There Will Be No Time* (1946), was that they were "concentrated spatially." As the Cold War deepened, many scientists and political commentators began to suggest that American urban populations were excessive; atomic disasters would simply affect too many people, and too many industrial sites. The most effective and comprehensive solution to this dilemma – but also the most contentious and expensive – was a massive program of urban dispersal and decentralization, a proposal that had been anathema to most planners as recently as the Second World War.[77] Though some aggressive theorists salivated at the prospect of an America speckled by evenly-distributed towns of equal population, most agreed that the costs of such a utopia, ironically, would be too damaging to an American war machine dedicated to matching the Soviet Union stride for stride.

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factory will be the prime target – that they will be in the front line of battle." See FCDA, *Annual Report for 1951*, p. v.

[76] *Reduction of Urban Vulnerability*, Appendix V-A, pp. 1a, 6a, 8a.

[77] William L. Borden, *There Will Be No Time: The Revolution in Strategy* (New York: MacMillan, 1946), p. 65; Ogburn, "Sociology and the Atom," p. 272; Mel Scott, *American City Planning Since 1890* (Berkeley: University of California Press, 1969), p. 369. The argument for dispersal seemingly ran counter to the acknowledgement by the FCDA that cities should enter into "mutual aid pacts" – but as I have argued, and continue to develop below, some cities were more salvageable than others. See Federal Civil Defense Administration, *This is Civil Defense* (Washington: U.S. Government Printing Office, May 1951), p. 13.

However, various forms of limited dispersal did gain significant currency, particularly in the case of new urban landscapes, and such principles as remote location of bomb production, placement of war contracts in small cities, creation of new, widely spaced satellite towns, increased highway construction, and control of inner-city rebuilding were all frequently proposed. As a result, older, dense, and "geographically bound" cities, potentially impossible to disperse, were considered particularly vulnerable. For this reason and others, American scientists, strategists, and other speculators turned New York and Washington into far more popular targets for projected nuclear attacks than less dense cities like Los Angeles and Houston.[78]

The most powerful early source spurring calls for urban decentralization was the United States Strategic Bombing Survey's report on the effects of atomic bombs on Hiroshima and Nagasaki. As *The American City* reported with alarm in August 1946, the two Japanese cities were chosen as targets precisely because of their concentration of activities and population, not to mention Hiroshima's particularly level and open topography, which allowed the effects of the blast to "spread out." As a result, the Survey cautioned, given "the similar peril of American cities...the value of decentralization is obvious."[79]

In the United States, a nation with a higher urban to non-urban ratio than Cold War rivals like China and the Soviet Union, a city was, as Bernard Brodie put it, "a

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[78] See Donald Monson and Astrid Monson, "How Can We Disperse Our Large Cities?" *The American City* 65.12 (1950), pp. 90-92, and 66.1 (1951), pp. 107-111; Zarlengo, "Civilian Threat," p. 936; Alexander Hammond, "Rescripting the Nuclear Threat in 1953: *The Beast from 20,000 Fathoms*," *Northwest Review* 22.1/2 (1984), pp. 181-194. Dispersal was repeatedly debated in the *Bulletin of Atomic Scientists*; see, in particular, volumes 6.8/9 (1950), 7.9 (1951), and 9.7 (1953).

[79] "The Atomic Bomb and the Future City," *The American City* 61.8 (1946), p. 5. Edward Dimendberg argues that this brief *American City* piece "established the equation, made repeatedly after the war and throughout the 1950s, between urban concentration and military vulnerability," but he does not mention the

made-to-order target, and the degree of urbanization of a country furnishes a rough index of its relative vulnerability to the atomic bomb." Like many writers familiar with the costs of national armament programs, Brodie strongly questioned the feasibility of the most drastic urban dispersal plans, including 'linear' or 'cellular' cities, suggesting that such schemes would interfere with the natural growth of organic urban units. However, while his assertion that the military benefits of massive, forced dispersal would not be commensurate with the costs was undoubtedly accurate, he did conclude that a limited program of industrial and infrastructural decentralization (or 'compartmentalization'), as well as a general encouragement of suburbanization, would be significantly advantageous.[80] It was these more 'realistic' questions that were central to the concerns of all but the most fanatical of the dispersal advocates. The argument that dispersal should remain secondary to international control of atomic energy – a popular position taken by Louis Wirth and others immediately after the Second World War – faded, along with hopes for global governance, as geopolitical hostilities increased.[81]

The same August 1946 issue of *The American City* also featured an article titled "Planning Cities for the Atomic Age," essentially a summary of the views of noted decentralization advocate and planner Tracy Augur, who had been shaken by the damage

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U.S. Strategic Bombing Survey. See Dimendberg, "City of Fear: Defensive Dispersal and the End of Film Noir," *ANY: Architecture New York* 18 (1997), pp. 14-17; the quote is from p. 15.

[80] Brodie, "Military Policy and the Atomic Bomb," p. 33; Lt. Col. George R. Charlton, "Industrial Vulnerability in the Atomic Age," *Air University Quarterly Review* 3.2 (1949), pp. 13-23; Zarlengo, "Civilian Threat," p. 932. Cluster and linear cities are described in Marshak, Teller, and Klein, "Dispersal of Cities and Industries." The evidence that any industry decentralized *primarily* for protective reasons is mixed, but it does exist; see "Spreading Out," *The Architectural Forum* 89.4 (1948), pp. 18, 20, 22; Hanson W. Baldwin, "Strategy for Two Atomic Worlds," *Foreign Affairs* 28.3 (1950), pp. 386-397. The call to relocate strengthened with the announcement of a national industrial dispersal policy in August 1951; see U.S. Department of Commerce, Area Development Division, *Industrial Dispersion Guidebook for Communities* (Washington: U.S. Government Printing Office, 1952). Of course, the Manhattan Project had set a new standard for dispersal.

[81] See Louis Wirth, "Does the Atomic Bomb Doom the Modern City?" *New Jersey Municipalities* (April 1946), pp. 25-29.

visited from the air on dense European cities during the war. In this piece, as well as other contributions to such varied periodicals as *The Appraisal Journal*, the *Journal of the American Institute of Planners*, and, most notably, the *Bulletin of the Atomic Scientists*, Augur consistently laid out the case for the dispersal of cities as a defensive measure against a potential atomic attack. His argument was a relatively simple one: *space* was the best military defence against the bomb, and congested, poorly organized, and centralized cities were inviting targets. Like many similar advocates of decentralization, Augur was aware of the tremendous financial and social costs his plans seemed to entail, but he deflected these by stressing that the appropriate planning of inevitable *new* construction would not incur any additional expenses. If plotted scientifically, new towns of 30,000 to 50,000 residents would not simply girdle an existing urban area but stand as "semi-independent communities" – clusters, inspired by the British garden city model, that were separated from one another by belts of open or agricultural land (Figure 32). As a result, Augur's hypermodern suggestion that older, nineteenth-century patterns of urban life and design were made unsuitable and obsolete by technologies such as the radio, the telephone, and the automobile was fused with a *pre-modern* small-town idealism. This nostalgia was premised, as another proponent of decentralization argued, on the assertion that residents of "small and medium-sized communities lead a much more natural and normal life than those in large cities."[82]

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[82] "Planning Cities for the Atomic Age," *The American City* 61.8 (1946), pp. 75-76, 123; Tracy B. Augur, "Decentralization Can't Wait," *The Appraisal Journal* 17.1 (1949), pp. 107-113; Scott, *American City Planning*, p. 449. See also "Defense Considerations in City Planning: Statement by The American Institute of Planners," *Bulletin of the Atomic Scientists* 9.7 (1953), p. 268; Don G. Mitchell, "Social Aspects of Decentralization," *Mechanical Engineering* 70 (1948), pp. 532-534. Mitchell was the president of Sylvania Electric Products, Inc. A very similar claim is made in Ogburn, "Sociology and the Atom," p. 271: "We could have better health, fewer accidents, wider streets for automobiles, more parking places for automobiles, landing places for helicopters, more sunlight, space for gardens, more parks, less smoke, more comfortable homes, efficient places of work, and, in general, more beauty." Ogburn, a leading American

Interestingly, the ideal *post*-nuclear community in many science fiction novels and films was either a small town or another type of contained, purposeful settlement, such as a college or monastery. These scenarios shared with those produced by nuclear strategists a belief in *survivability*. Both genres routinely argued that a sufficient number of people would live through a nuclear disaster and rapidly reconstruct American society, and, in most cases, that these would be people "who are closely in touch with the unique spirit of America, and the values of the system of 'free enterprise'." Not one strategist or government planner, Dean MacCannell points out, "has envisaged a post-attack rebuilding by people who never much benefited from American society, or quite understood what America was all about, that is, by people who lived at a disadvantage on the margins of society."[83]

Augur's proposals would not only solve malingering problems of 'blight', but they would provide additional security to the American people, finally guaranteeing "the full benefits of the atomic age." As he put it, a "metropolitan area that is well organized in terms of the amenities of modern urban living and the efficient conduct of modern business will also be an area of decreased vulnerability to atomic bombs and other weapons of mass destruction." For this reason, the value of planned dispersal would not end with the closure of Cold War hostilities; it possessed a logic above and beyond the exigencies of geopolitics and national defence. But there was also a third, related

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social statistician and advocate of objective, quantitative methods in social science, was investigated by the FBI beginning in 1950, as a result of his work on dispersal. A corporate recipient of one of Ogburn's research surveys complained to the Bureau that the "information being sought could be of interest to enemies of the United States." See Mike F. Keen, *Stalking the Sociological Imagination: J. Edgar Hoover's FBI Surveillance of American Sociology* (Westport, CN: Greenwood, 1999), p. 58.

[83] Martha A. Bartter, "Nuclear Holocaust as Urban Renewal," *Science-Fiction Studies* 13.2 (1986), pp. 148-158; Dean MacCannell, "Baltimore in the Morning...After: On the Forms of Post-Nuclear Leadership," *Diacritics* 14.2 (1984), pp. 33-46; the quote is from p. 40; Curry, "In the Wake of Nuclear War," p. 319.

motivation. For Augur, dispersal held "equal value against the type of penetration that has become so common and so effective in modern times and which depends on the fomenting of internal disorder and unrest."[84] His advocacy of urban design suited to the atomic age thus moved swiftly and smoothly across scales, linking national rituals to the conduct and proximity of individual bodies.

Plans for 'regional cities' were hardly a response to the atomic bomb only, but the murmurs of support for dispersal within the federal government gave Augur and colleagues such as Clarence Stein added incentive to push various decentralization and "new town" schemes. In 1948, the National Security Resources Board began to consider the transplantation of certain government operations to Washington's periphery. An early report on industry and decentralization, *National Security Factors in Industrial Location*, was published concurrently; it appealed to businesses to relocate so that "further urban concentrations of more than 50,000 people may be avoided." A note at the bottom of the last page added that the suggestions sketched in the pamphlet were not intended to encourage relocation for the sake of lower wages, diminished working conditions or the shredding of union contracts. Augur, meanwhile, began consulting for the NSRB in 1949. Congress rejected his major dispersal plan, which had endured many modifications, just days after President Truman had earned congressional wrath for firing

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One prominent fictional example was Walter M. Miller, Jr.'s short story/novel *A Canticle for Leibowitz* (1955/1959).

[84] "Planning Cities for the Atomic Age," p. 75; Augur, "Decentralization Can't Wait," p. 110; Tracy B. Augur, "The Dispersal of Cities as a Defense Measure," *Journal of the American Institute of Planners* 14.3 (1948), pp. 29-35. The last piece was reprinted from the May 1948 issue of the *Bulletin of Atomic Scientists*. See also Dimendberg, "City of Fear." Lewis Mumford was concurrently making analogous assertions; in a 1948 lecture to the Defense Department's War College, he argued that cities should become "less attractive targets," and noted the gains in efficiency and quality of life that would result. See Kermit C. Parsons, "Shaping the Regional City, 1950-1990: The Plans of Tracy Augur and Clarence Stein for Dispersing Federal Workers from Washington, D.C.," Society for American City and Regional Planning History Working Paper (October 1989), p. 4.

Douglas MacArthur as the commander of American forces in Korea. Augur resigned shortly thereafter, yet some forty years later the location of many offices and laboratories with ties to the military corresponded closely to his call for a "dispersal arc" north and west of the District of Columbia (Figure 33).[85]

The hybrid of archaic noble savagery and emergent suburban normality was nowhere more evident than in a 1946 collection titled *Cities are Abnormal*. In the introduction, editor Elmer Peterson succinctly outlined the case for urban dispersal, effortlessly summoning and aggregating a dizzying array of perspectives:

> From almost every angle that we view urban life in America, the decentralization of cities seems desirable – public health, economic betterment, economic logistics, moral welfare, better local utilization of natural resources, better distribution of manufactured products, a better conceived military defense, a more rational architecture, and, in general, a happier adaptation to the changing mores...natural or rural life is the inescapable norm.[86]

Peterson's slightly offhand mention of military defence was extended in a later chapter on "The Atomic Threat." Author Warren S. Thompson, again describing contemporary cities as particularly vulnerable, suggested an alternative:

> The form best adapted to minimize bomb damage would probably be that of an irregular elongated S. If the community is built in this form, only a small part of the full destructive power of the bomb could be made effective against it; the far greater part would be dissipated into the surrounding open spaces. The exact shape of the curves used should be determined by the best technical advice available regarding the radius of destruction likely to be achieved by atomic bombs in the foreseeable future, and by a careful calculation of shapes offering the most difficult targets to airborne missiles.[87]

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[85] Parsons, "Shaping the Regional City," p. 28; National Security Resources Board, *National Security Factors in Industrial Location* (Washington: U.S. Government Printing Office, September 1948), pp. 9, 15n. The NSRB was created, along with the National Security Council and the CIA, as a result of the 1947 National Security Act. Plans for removing government facilities to semi-rural location in order to maintain continuity reached a pinnacle of sorts with the Greenbriar Congressional Bunker in West Virginia, designed to hold all members of Congress during a nuclear conflict. Construction began beneath a resort in 1957, and the bunker was only exposed in 1992. See Vanderbilt, *Survival City*, p. 135.

[86] Elmer T. Peterson, "Cities are Abnormal," in Peterson, ed., *Cities are Abnormal* (Norman: University of Oklahoma Press, 1946), pp. 3-26; the quote is from pp. 11, 20. In a later chapter, Peterson voices an all-too familiar post-war concern for "race suicide" (p. 251).

[87] Warren S. Thompson, "The Atomic Threat," in Peterson, ed., *Cities are Abnormal*, pp. 225-242; the quotes are from pp. 233, 234.

As a proposal, Thompson's 'S' was not unique, but his comments were particularly telling with respect to the instrumental *scientization* of urban spaces, a process that frequently utilized the hard language of physics and mathematics. Early Cold War America was marked by a series of abstract, interdisciplinary academic models – including the social physics and regional science that influenced many geographers – that united the force of physical science with social explanation. All were deeply tied to the military-industrial-academic complex of the security state, and each subject possessed a repressed spatiality that surfaced explicitly when deployed in the service of Cold War imperatives. Put simply, while planners debated the specifics of atomic physics, scientists became urban visionaries, and both groups became intimately familiar with geopolitical strategy. From this perspective, Chesley Bonestell's god's-eye views from above, as well as the ubiquitous diagrams of concentric destruction, possessed a resemblance to the geometric lattices of spatial science that extended beyond representational technique. Ironically, the coalescence of expertise produced atomic cities that remained crude – universalizing *abstractions* dependent on stereotypes and generalizations for their authority, but powerful and prolific models nonetheless.

Project East River was complemented by a nearly concurrent study on air defence at MIT – Project Charles, discussed in the previous chapter. The leaders of the latter initiative were concerned with all aspects of continental security, including the locational pattern of population. Since such matters were beyond the purview of the average physicist or military strategist, three economists – Carl Kaysen, Paul Samuelson, and James Tobin, all eventually towering figures in their discipline's post-war pantheon – were enlisted to proved an appendix on "Economic Aspects of Passive Defense." The

result was an astonishing exposition of neoclassical reasoning, a cold-blooded summary that noted the logical advantages of urban concentration, but then determined that this was a moribund equation in the atomic age:

> On any rational calculation, the possibility of enemy attack has radically changed, in favor of dispersal, the values to individuals and to society of alternative locations of particular installations, whether factories or houses. A man who is deciding whether his new house should be built in Manhattan or Fairfield, Connecticut should now include an allowance for the distinct possibility that in Manhattan both his house and his family will be destroyed – increasing both the target attractiveness and the danger of fire.[88]

In urban studies, then, the city became a field of inquiry open to an astonishingly diverse array of writers, many arguing that congested, poorly organized, and centralized cities were not only inviting targets but unviable *systems*. Perhaps the most infamous example of such work was the cybernetics pioneer Norbert Wiener's 1950 *Life* plan for radial "life belts" of transportation lines and essential services, separated from downtowns by "safety zones" where most construction would be prohibited. This spatial distinction was essential. As the Detroit planners Donald and Astrid Monson argued in a contemporaneous article in *The American City*, without empty or agricultural interstitial areas, "the very factor which is counted on for defense is lost."[89]

Since a city, for Wiener and his colleagues, was "primarily a communications center, serving the same purpose as a nerve center in the body," the key to a livable existence was the ordered planning of informational networks. And Wiener's scheme, the magazine noted, would be useful in all circumstances. During periods of peace, quite incidentally, "it would expand and accelerate the current trend of many city dwellers

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[88] *Problems of Air Defense: Final Report of Project Charles* (Cambridge: Massachusetts Institute of Technology, June 15, 1951), p. VII-I-16. A copy of this report is in the Institute Archives, MIT. See also Carl Kaysen, "The Vulnerability of the United States to Enemy Attack," *World Politics* 6.2 (1954), pp. 190-208.

[89] Monson and Monson, "How Can We Disperse Our Large Cities?" p. 92.

toward the suburbs."[90] For early cybernetics, control was "the never-finished work of regulation which operates to bring deviations from system requirements back in line." Wiener's atomic city was thus not simply an updated version of nineteenth-century urban technical interventions. It also suggested that the governance of city life was, in addition to authoritative schemes implemented from above, a problematic of inner subjectivity and individual "participation in the networks of existence." Moreover, the cybernetic framework was a perfect example of a synoptic worldview that was not contextually dependent. Understanding and designing urban systems, Wiener's vision seemed to suggest, was no different than his construction of the man-machine weapons that launched cybernetics during World War Two.[91] And, in one sense, this postulation was correct.

Conclusion

> The whole program should not be regarded as an hysterical atomic defense project but rather an as modern adaptation of city growth to social conditions. An important part of this program would seem to be intensive social studies to understand the sociological "make-up" of cities and to determine how natural trends in decentralization may be stimulated.
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> - Ralph E. Lapp [92]

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[90] "How U.S. Cities can Prepare for Atomic War," *Life* (December 18, 1950), pp. 77-86. See also Zarlengo, "Civilian Threat," pp. 934-935. Such dual reasoning was identical to that summoned by Eisenhower's well-known 1956 Interstate Highway Act. See Mark H. Rose, *Interstate: Express Highway Politics, 1939-1989*, Revised Ed. (Knoxville: The University of Tennessee Press, 1990); Francis Bello, "The City and the Car," in Whyte Jr., ed., *The Exploding Metropolis*, pp. 53-80; Jackson, *Crabgrass Frontier*, p. 249; Dimendberg, "City of Fear."

[91] Osborne and Rose, "Governing Cities," pp. 749, 750; Peter Galison, "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision," *Critical Inquiry* 21 (1994), pp. 228-266; Peter Hall, *Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century*, Updated Ed. (Oxford UK and Cambridge USA: Blackwell, 1996), p. 327. The cybernetic embrace of regulation by larger systems, and the subsequent weakening of individuality, was a key target in the popular critiques of 'organization man' and 'the lonely crowd' mounted by the sociologists William Whyte and David Riesman, respectively. See Timothy Melley, *Empire of Conspiracy: The Culture of Paranoia in Postwar America* (Ithaca: Cornell University Press, 2000), pp. 62-63.

[92] Lapp, "Atomic Bomb Explosions," p. 54.

By the end of the 1950s, according to Guy Oakes, the FCDA had simply "written off the possibility of protecting urban populations" unless they could be evacuated faultlessly in advance of an attack. Cities such as New York became the urban equivalent of "national sacrifice zones," the contaminated places starting to dot rural America. Not coincidentally, it was precisely this period that confirmed the triumph of 'centrifugal space' – the decentralized landscape of freeways and sprawl that marks, for Edward Dimendberg, the end of film noir, as well as the end of "the metropolis of classical modernity, the centered city of immediately recognizable and recognized spaces." The circulation of information and automobiles had replaced the movements of pedestrians.[93] Though hardly invigorated by much of the inhuman modernism of central city redevelopment, critics such as Lewis Mumford also excoriated the effects of highway construction, arguing (in 1958) that it had "the same result upon vegetation and human structures as the passage of a tornado or the blast of an atom bomb."[94]

In this chapter I have built upon the now-familiar claim that post-war America was characterized by a powerful disillusion for urban life that began at the core. Central cities, for many commentators, were spaces of blight, repositories of extreme cultures, classes, and races, and were threatened from above and within. The language of anxious urbanism may well have been symbolic camouflage for broader fears, including the

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[93] Oakes, *The Imaginary War*, p. 109; Joseph Masco, "Lie Detectors: On Secrets and Hypersecurity in Los Alamos," *Public Culture* 14.3 (2002), pp. 441-467; the quote is from p. 462; Dimendberg, "City of Fear," p. 17. See also Dimendberg, "From Berlin to Bunker Hill," and "The Will to Motorization: Cinema, Highways, and Modernity," *October* 73 (1995), pp. 91-137. Dimendberg is, of course, gesturing toward Charles C. Colby, "Centrifugal and Centripetal Forces in Urban Geography," *Annals of the Association of American Geographers* 23 (1933), pp. 1-20. There is a troublesome, generalized inevitability to this model of centrifugal space (and its complementary predecessor, 'centripetal space'), and Dimendberg, playing somewhat loosely with time, is also dependent on the particular case of Los Angeles – a model used to advocate decentralization for *other* cities. However, in other respects, his analysis is an exceptionally suggestive one, particularly in the description of an emergent science of 'regional' or 'territorial' planning produced by the economic necessity of highways, and the cinematic traces of this discourse

decline of an American culture of victory.[95] However, this process also operated in reverse: discussions on the status of cities were specifically appropriated and encouraged by the development of Cold War geopolitical uncertainty, and by technology-inspired changes to the theory and practice of warfare. It was precisely the *domestic geography* of Cold War risks that led to the scientific planning schemes – some more drastic than others – designed to order and manage urban spaces while concurrently maintaining the various symbolic distinctions between central city and suburb. While the resemblance was powerful, these schemes were not simply 'the suburbs' imagined; they were frequently more rational and ordered than most of the actual suburban landscapes constructed after the Second World War. For the Monsons, the suburban growth of the 1940s was "without plan and [was] largely an extension of the amorphous sprawl of the central cities." Planning this spontaneous, inevitable decentralization appeared to be a natural step forward.[96]

Of course, as Dimendberg notes, by the end of the 1950s, support for decentralization initiatives and the technologized sprawl of highway landscapes was beginning to fade, a trend that would deepen during the following decade. Equally, calls for dispersal and evacuation in advance of attack had subsided substantially by the end of Eisenhower's presidency in 1960. There were several reasons for the waning of such proposals. Some influential strategists had concluded that cities would be, by and large, secondary to military and other non-urban targets in the event of a nuclear strike. The

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[94] Quoted in Dimendberg, "The Will to Motorization," p. 131.
[95] Beauregard, *Voices of Decline*, p. 6; Tom Englehardt, *The End of Victory Culture: Cold War America and the Disillusioning of a Generation* (New York: Basic Books, 1995).
[96] Monson and Monson, "How Can We Disperse Our Large Cities?" p. 92; see also Donald Monson and Astrid Monson, "A Program for Urban Dispersal," *Bulletin of the Atomic Scientists* 7.9 (1951), pp. 244-250.

development of new weaponry, particularly intercontinental ballistic missiles (ICBMs), had furthered the futility of evacuation, despite the vast and expensive warning lines established across the north of the continent.

But perhaps the most intriguing and persuasive reason for the gradual disappearance of explicit discussions of dispersal was that by the late 1950s it had become, through a subtle discursive slippage, largely a "benign discourse over structural changes like suburban high schools and shopping malls." Earlier studies such as Project East River had noted that dispersal policy was "in line with general trends" of post-war urban growth. And under conditions of nuclear deterrence, Cold War American cities, Dean MacCannell argues, became "defense weapons" – places not only required to receive an atomic bomb, but to "*absorb* the hit so that damage minimally spills over to surrounding areas." The discourse of urban decline and the various distinctions maintained and encouraged between central city and suburb were of very specific strategic value – in channeling money not spent on inner-city improvement to the national arsenal, but also in consistently locating, through a powerful combination of lurid drama and rational science, the locus of atomic danger in the heart of America's cities.[97] Such circular histories are a telling reminder of the peoples and places literally left behind by the combination of geopolitics and science during the early Cold War.

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[97] Elizabeth W. Mechling and Jay Mechling, "The Campaign for Civil Defense and the Struggle to Naturalize the Bomb," in William L. Nothstine, Carole Blair, and Gary A. Copeland, eds., *Critical Questions: Invention, Creativity, and the Criticism of Discourse and Media* (New York: St Martin's Press, 1994), pp. 125-154; the quote is from p. 151; *General Report: Part One of the Project East River* (New York: Associated Universities, Inc., October 1952), p. 16; MacCannell, "Baltimore in the Morning," pp. 40, 45, original emphasis.

Conclusion: Into Space

> [The] cyborg has no origin story in the Western sense – a 'final' irony since the cyborg is the awful apocalyptic *telos* of the 'West's' escalating dominations of abstract individuation, an ultimate self untied at last from all dependency, a man in space.
>
> - Donna Haraway [1]

Popular science fiction films such as *Invaders from Mars* (1953), *Them!* (1954), and *Invasion of the Body Snatchers* (1956) typically figured the perils of communism through the trope of bodily replication. Though 'reds' remained a distinctly alien category, the threat of 'the other' could no longer be contained within a field of visible externality. Rather, danger emerged from *inside*, producing a problem of indeterminate identities and insecurity.[2] In *Body Snatchers* personal vulnerability is a product of sleep – when the temptations of the unconscious prevail over self-vigilance. Set on the aptly named world of Altair IV, *Forbidden Planet* (1956) develops the eroticized psychoanalysis of *Body Snatchers* by positioning the inhuman as *native* to the individual psyche, located within a savage Freudian id. A projected "monster from the id" is unleashed and constrained through the interface between human mind and machine, appearing only when the two become singular and indistinguishable.

Science fiction cinema "positively invites psychoanalytic readings" of suppressed or repressed sexual desires and the use of aliens or extraterrestrial forces to represent "civilization's conflict with the primitive unconscious."[3] But in the equally totalizing realm of cybernetics, the foundations of human identity were also challenged, and new

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[1] Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), pp. 150-151.

[2] Michael Rogin, "Kiss Me Deadly: Communism, Motherhood, and Cold War Movies," *Representations* 6 (1984), pp. 1-36. See also Frederick M. Dolan, "Cold War Metaphysics," in *his Allegories of America: Narratives, Metaphysics, Politics* (Ithaca: Cornell University Press, 1994), pp. 60-113.

[3] Annette Kuhn, "Repressions," in Kuhn, ed., *Alien Zone: Cultural Theory and Contemporary Science Fiction Cinema* (London: Verso, 1991), pp. 91-95; the quotes are from p. 92. A psychoanalytic reading of

monsters defined against but always produced out of the constructed human were forged. Cybernetic creations such as computers, bio-genetically engineered organisms, and cyborgs further develop "those forms of ambivalence reserved for the Other that is the measure of ourselves," and potentially mark the inauguration of a *posthuman* condition.[4]

Forbidden Planet opens on United Planets Cruiser C-57-D, a military ship on a rescue mission to Altair IV, where the spacecraft Bellerophon had landed some twenty years earlier and promptly ended all communication with Earth.[5] Arriving in the planet's atmosphere, C-57-D and its all-male, all-white, all-American crew are 'scanned' and contacted by a lone survivor, Dr. Morbius (the Bellerophon's philologist). Though Morbius urges Commander J. J. Adams not to land, all warnings are ignored. Upon arrival, the crew encounters Robby, an extraordinarily advanced robot who escorts the Commander, a lieutenant, and the ship's doctor (Doc) to Morbius's home. There, the philologist and his young daughter, Altaira meet the soldiers. After Morbius refuses to return to Earth with his rescuers, Adams decides to contact home for further instructions. These plans, however, are foiled by a mysterious presence that enters C-57-D at night and destroys valuable communications equipment. Suspecting Morbius, Adams and Doc return to the house to confront him, and find the philologist emerging from behind a secret panel in his study. Thus exposed, Morbius reveals a vast complex of alien technology below his home. Built by the Krel, a "mighty and noble race" who

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Forbidden Planet is the obvious route, but my approach here is stubbornly materialist, if only because the connections I draw from the film cannot be reduced to the workings of desire.

[4] Bill Nichols, "The Work of Culture in the Age of Cybernetic Systems," in Timothy Druckrey, ed., *Electronic Culture: Technology and Visual Representation* (New York: Aperture, 1996), pp. 121-143; the quote is from pp. 127; N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999).

[5] This short plot summary is my own, but I have been aided by a longer description in Bill Warren, *Keep Watching the Skies! American Science Fiction Movies of the Fifties: Volume One, 1950-1957* (London: McFarland, 1982).

approached "freedom from physical instrumentality," but mysteriously perished on the threshold of this "supreme accomplishment," the underground world includes a vast expanse of nuclear reactors, still drawing energy from the planet's core, and a "plastic educator" responsible for Morbius's substantially-improved intellect.

The discovery of these wonders is halted by the concurrent death of the United Planets radioman, torn limb from limb (a demise identical to that suffered by members of the Bellerophon). An "invisible monster" returns to the C-57-D that night, materializing under blaster fire as a massive, shrieking beast, and killing several more men. It vanishes only when Altaira wakes her father in his laboratory; behind him, several gauges wink out. Returning to the house once more, Adams and Doc encounter Altaira. As she speaks with the Commander, Doc runs to the laboratory, where he uses the "brain-boosting machine" with the knowledge that Morbius barely survived its effects. Carried back into the house by Robby, Doc manages to gasp "monsters from the id" before he dies. When informed that the id is the "elementary basis of the subconscious mind," Adams suggests that the construction of machines that responded to (and created) Krel thoughts also released the "secret devils" of the id during dream-sleep. The latest instantiation of the beast is *Morbius himself* – a speculation proven when Robby's programmed prohibition against harming humans prevents the robot from destroying the monster as it advances upon the home.[6] Unsafe even behind the Krel-metal laboratory doors, Morbius confronts the monster and collapses, but not before directing Adams ("son") to throw a switch that will initiate a self-destruct sequence. Adams and Altaira leave on C-57-D, using Robby as a cybernetic navigator. From the safety of space, the

[6] It has been argued that Robby's directive is based on Isaac Asimov's Three Laws of Robotics. See John Trushell, "Return of *Forbidden Planet*?" *Extrapolation* 64 (1995), pp. 82-89.

remaining crew watches Altair IV explode on a televisual screen, leaving Adams to muse, "it will remind us that we are, after all, not God."

To situate *Forbidden Planet* in the United States of the early Cold War is to recognize the double and conflicting roles of significant economic prosperity and fears of excess related to the use of atomic energy and other technologies. These concerns are explicitly manifest in the film when Morbius reveals to Adams that Robby is a creation made possible by early translations of the computerized Krel library. When Adams suggests that the systemic knowledge contained within such marvelous possessions should be returned to Earth, Morbius states that "man is unfit, as yet, to receive such knowledge," and cites his "own conscience and judgment" in the decision to dispense information at his discretion.[7]

Advanced atomic technology is strikingly represented in *Forbidden Planet* when Morbius, Adams and Doc descend into the vast underground Krel complex of "nine thousand two hundred thermonuclear reactors" on "seventy-eight hundred levels." Incomprehensibly large, devoid of "direct wiring," and perfectly self-maintaining after two thousand centuries, the subterranean world is impeccably *inhuman*, a technoscientific marvel of "limitless power" far beyond the conceptual mastery of primitive human minds. "Man does not behold the face of the Gorgon and live," states Morbius, and yet it

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[7] The reference here is to Steven Greenblatt, *Marvelous Possessions: The Wonder of the New World* (Chicago: University of Chicago Press, 1991). See also J. P. Telotte, "Science Fiction in Double Focus: *Forbidden Planet*," *Film Criticism* 13.3 (1989), pp. 25-36. John Trushell has argued that Morbius's reluctance parallels the ethical stance taken by those scientists who had developed the atomic bomb but opposed the creation of a hydrogen superbomb. Indeed, the 1949 Report of the General Advisory Committee of the Atomic Energy Commission, a body directed by J. Robert Oppenheimer, stated that "[m]ankind would be far better off not to have a demonstration of the feasibility of such a weapon until the present climate of world opinion changes." Morbius and his individualist arrogance could thus additionally be read as an allegory of Oppenheimer, whose opposition to the superbomb ultimately led to accusations of Communist associations and the withdrawal of his security clearance after a "special hearing" in 1954. See Trushell, "Return of *Forbidden Planet*?" p. 85.

is only *man* who can attempt to confront this mechanized other, while the feminized Altaira, simulated in miniature by the brain booster, remains an *object* in the masculine field of vision. In an intriguing assertion of Cold War geopolitical tropes, the colonizing forces of science and the military are both figured through masculinity. Although differentially representative of the compassionate father and the assertive son, the two struggle for the same trophy.

The earliest formal definition of a cyborg, or cybernetic organism, concerned the future need for control systems that would assist bodily homeostasis during space travel. As Manfred Clynes, the scientist who coined the term, remarked, 'cyborgs' referred to "persons who can free themselves from the constraints of the environment to the extent that they wished." Clynes believed, wishfully, that this was a physiological predicament only, an "enlargement of function" that would not alter the *nature* of humans. But the premise of freedom from context was also the dream of post-war social scientists, from the market planners of economics to the aptly named 'space cadets' of quantitative geography.[8]

Cyborgs, or posthumans, proliferate in *Forbidden Planet*. Robby, of course, is a wonderful cybernetic device, a tireless servant who possesses magical, superhuman abilities. "Rendered innocuous by a built-in safety factor," Robby is the ultimate domestic appliance, producing meals, watching coffeepots, and fabricating new clothing for Altaira. In sum, the robot is feminized as a replacement for Morbius's dead wife. The result is that, at least in the case of Robby, threats of replication, replacement and human

[8] See Manfred E. Clynes and Nathan S. Kline, "Cyborgs and Space" (1960), in Chris Hables Gray, ed., *The Cyborg Handbook* (New York: Routledge, 1995), pp. 29-33; Chris Hables Gray, "An Interview with Manfred Clynes," in *Ibid.*, pp. 44-53; the quotes are from pp. 47, 48; Philip Mirowski, *Machine Dreams: Economics Becomes a Cyborg Science* (Cambridge: Cambridge University Press, 2002), p. 285.

inadequacy in a cybernetic age are limited to the body of the woman. As one of the United Planets crew remarks with a smile, Robby is "like a mother."[9]

Despite the status of cybernetics as a science of management, the attempted transformation of the world into common codes and machinic assemblages also contained ambiguities and contradictions, "something that always exceeds control," leading to what John Johnston calls *information multiplicity*. Nowhere is this viral quality more evident than in Norbert Wiener's distinction between positive and negative cybernetic machines. The former is positioned – like Robby – "alongside man as his brother and peer"; the latter is rigid and inflexible, depicted "through tropes of domination and engulfment," stripping humans of autonomy or agency. Key to Wiener's division is the maintenance of bodily boundaries, which map the space of the autonomous or humanist self. According to Katherine Hayles, "the danger of cybernetics is that it can potentially annihilate the liberal subject as the locus of control," a problem enunciated in tandem with anxieties concerning communist penetration into individual minds and the body-space of the state.[10]

In their refusal to position the observer, or scientist, inside the system of study, Wiener and his colleagues continued the long tradition of modest witnessing in science: they posed transcendental truth claims concerning the systemic organization of the world

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[9] Telotte, "Science Fiction in Double Focus," p. 28. This discussion is troubled (and perhaps supported) by both the box cover of the *Forbidden Planet* video and the original movie poster, both featuring a monstrous, glowing Robby carrying a limp woman (Altaira, presumably). There is no corresponding scene in the film.

[10] John Johnston, *Information Multiplicity: American Fiction in the Age of Media Saturation* (Baltimore: Johns Hopkins University Press, 1998), p. 2; Hayles, *How We Became Posthuman*, pp. 105, 110. As the attempts of Morbius and the Krel indicate, when the body is figured as a construct, a vessel for mutual communication between mind and machine, rational autonomy appears impossible. In this sense it is deeply ironic that in *Forbidden Planet*, one (earlier) challenge to rationality, in the form of psychoanalysis, is set against a second. At the very moment when Morbius loses control, when he can no longer contain

from a position of self-invisibility.[11] But the recent dislocation of objective science has produced an alternate "horizon of intelligibility" which Michel de Certeau dubs *science/fiction.* Noting that the unreal *multivocality* of 'fiction' haunts the singular privilege of science (and certain forms of historiography), de Certeau proposes an interspace, or heterology, at the juncture of these two categories, in effect ending the tenuous, constructed distinction long maintained by objective science. The politicized recognition of fiction in science is an assertion of the repressed that treads close to Donna Haraway's tactical juxtaposition of the "actual and figural." But in the anthologies of Cold War science fiction and popular science, the contours between 'fact' and 'speculation' were particularly blurry when discussions turned to one subject. As *Forbidden Planet* and countless other films and novels depicted "panic and relief, invasion and dispersal, collapse and recovery" in both familiar and subversive ways, they connected these themes to the multiple but aligned scales of bodies, laboratories, nations and globes.[12] All were tied to a final external environment that permitted both comparisons to communism and the promise of new strategic and scientific horizons.

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the beast in his dreams, the multiple, monstrous others of primitive inhuman and technologized posthuman are brought into confluence.

[11] Donna Haraway, *Modest_Witness@Second_Millenium. FemaleMan©_Meets_OncoMouse™: Feminism and Technoscience* (New York: Routledge, 1997), pp. 23-24; Cary Wolfe, "In Search of Post-Humanist Theory: The Second Order Cybernetics of Maturana and Varela," *Cultural Critique* (1995), pp. 33-70. In *Forbidden Planet*, despite the monster's status as a product of a lingering human primitivism, it can only be made material through the dehumanized technology of the Krel. This suggests that *Forbidden Planet* may strive for a conservative middle ground where the civilized forces of "laws and religion" cited by Adams negate the "subconscious hate and lust for destruction," and where the benevolent, objective political and military control over technoscience prevents an excess implicit within individual subjectivity. No longer modest, Morbius had, in the words of a dying Doc, become "too close," not only in the imposition of individual attitudes over the scientific method, but in the attempt to eliminate the distance between subject and object. These intellectual violations are paralleled by the bodily immodesty of Altaira, who swims naked and displays an abundance of naïve sexuality. In her discussion of Boyle and the Scientific Revolution, Haraway (*Modest_Witness*, p. 30) notes that "[f]emale modesty was of the body; the new masculine virtue had to be of the mind."

[12] De Certeau is cited in Nigel Thrift, "Inhuman Geographies: Landscapes of Speed, Light, and Power," in his *Spatial Formations* (London: Sage, 1996), pp. 256-310; the quote is from pp. 296; Michel de Certeau, *Heterologies: Discourse on the Other*, trans. Brian Massumi (Minneapolis: University of Minnesota Press,

Forbidden Planet is not only one of the most distinguished cinematic productions of the 1950s (known commonly as a Golden Age of science fiction), but an artful combination of "high culture allusion and high camp effects."[13] While it does not encapsulate the history that I have sketched in this dissertation, the film does appeal provocatively to the various strategic environments of the early Cold War, and, more importantly, their interdependence. The residence on Altair IV, complete with an ideal robot mother and huge reactors pulsing in the basement, is in certain respects an archetypal home for a suburban nuclear family. The American crew attempt to set up a shield around the space holding their ship that will alert them to the presence of an invading force. The motif of hostile, foreign regions, so redolent of colonialism, is clearly apparent in the exploratory designs of the 'United Planets' force – a small step outward from the United States – and the explicit rewriting of Shakespeare's *The Tempest* to suit a new imperial frontier. And, finally, the planet itself, seen exploding from a distance, projects a possible, nightmarish future for Earth, characterized by the mishandling of a potent atomic science, the ambitious models of cybernetics, and the totalitarian utopianism of technocracy.

This doomed Earth was a common theme in 1950s science fiction, and could be extended in any number of political directions, notably to the use of Mars as an additional opportunity for colonization and utopian social renewal. That the vision of Altair IV from the departing spaceship was itself a God's-eye view is deeply ironic, given the

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1986), pp. 200-221; Haraway, *Modest_Witness*, 2; Dale Carter, *The Final Frontier: The Rise and Fall of the American Rocket State* (London: Verso, 1988), p. 94.

[13] Seth Lerer, "Forbidden Planet and the Terrors of Philology," *Raritan* 19.3 (Winter 2000), pp. 73-86; the quote is from p. 73. Lerer argues quite convincingly (pp. 81, 83) that Morbius is the central subject in Forbidden Planet's allegory of exile, an émigré philologist who is "bearded, dark, elusive," fascinated with a dead civilization that rose to an "elevated cultivation" shattered like a fallen Athens, and tainted with the stain of collaboration just by virtue of his association with past violence.

moralizing of Commander Adams, but the apocalypse was, it should be recalled, only made possible through the mediating presence of a screen, as if the scene was a simulation.

What enables the coalescence of environments is not a specific film, but the motif of outer space. American interest in the 'final frontier' has received its interlocutors, many of whom have documented the extensive pre-Sputnik fascination with matters extraterrestrial, an interest that was not just romantic but, for some, quite practical.[14] The first report of the RAND Corporation, for instance, was titled *Preliminary Design of an Experimental World-Circling Spaceship*, a contribution that was received with significant skepticism by the Air Force, but ultimately proved to be quite prescient. After Sputnik, RAND resuscitated its largely dormant interest in space exploration (although the Corporation had long been interested in intercontinental ballistic missiles). A group of RAND staff produced an influential *Space Handbook* detailing the history and facets of astronautics, and Irwin Cooper of RAND's Mathematics Division wrote a short report on the cyborg "triangle" of man, machine, and space.[15] Given that scientists such as Werner von Braun and Heinz Haber were hosting Disney's "Man in Space" television series (which began in 1955), concocting speculative scenarios of space travel with the artist Chesley Bonestell, *and* consulting with the American military on problems of rocketry and aerospace medicine, the distance between Cooper's 'man' and the heroic figures

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[14] See, for instance, Walter A. McDougall, *...The Heavens and the Earth: A Political History of the Space Age* (Baltimore: Johns Hopkins University Press, 1997 [1985]).

[15] Robert W. Buchheim and the Staff of the RAND Corporation, *Space Handbook: Astronautics and its Applications* (New York: Random House, 1959); Irwin Cooper, "Triangle: Man, Machine, Space," RAND P-1680, April 29, 1959, RAND Library, Santa Monica, CA.

confronting a dark universe on the cover of science fiction paperbacks of the 1950s was minimal (Figure 34).[16]

Sputnik, MIT President James Killian wrote in an account of his White House role as Science Advisor to Dwight Eisenhower, was not itself a weapon that threatened American security, "but the thrust that launched the satellite was another matter." In this respect the geopolitics of space was an extension of the global views described in Chapter One. A lecture just four months after Sputnik by RAND Social Science Division member Joseph Goldsen mentioned a proliferating "axiom" directly derived from Halford Mackinder: "who controls space controls the universe; who dominates the space above the air dominates the world." Never one to pass up a hyperbolic proclamation, Senate Majority Leader and future President Lyndon Johnson similarly argued in the wake of the Soviet satellite that "control of space means control of the world." Johnson's equivalence was literal; the victors in the space race would be "masters of infinity," possessing the power to control nature. Technology, particularly in the form of instruments of sight, was essential to this authority. More important than an "ultimate weapon," Johnson claimed in a contemporaneous speech, was "the ultimate position – the position of total control over the earth that lies somewhere out in space."[17]

Even when phrased more inclusively, in the tones of humanity's mission, such rhetoric was bluntly redolent of American *planetary* imperialism. It was also the

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[16] See the discussion of von Braun and Haber in the Introduction, and the mention of Bonestell in Chapter Five. On Bonestell, see Vincent Di Fate, *Infinite Worlds: The Fantastic Visions of Science Fiction Art* (New York: Penguin Studio, 1997).

[17] James R. Killian, Jr., *Sputnik, Scientists, and Eisenhower: A Memoir of the First Special Assistant to the President for Science and Technology* (Cambridge: The MIT Press, 1977), pp. 3, 9; Joseph Goldsen, "Some Political Implications of the Space Age," February 24, 1958, Accession 1.2, Series 200S, Box 551, Folder 4712, Rockefeller Foundation Papers, Rockefeller Archive Center, Tarrytown, NY, p. 3; Michael Sherry, *In the Shadow of War: The United States Since the 1930s* (New Haven: Yale University Press, 1995), p. 214.

ontological location (or professed non-location) from which Michel Foucault's transparent society could be made legible, and the basis of the computerized world models just beginning to take shape in the late 1950s. Before actual photographs taken from this vantage point were broadcast and distributed, Johnson was imagining a new, more dominant way of grasping the globe (Figure 35). He was furthering an abstraction of enmity and a derealization of vision, made manifest during the First and Second World Wars, which militarized the world in a quest for national security, turning it into a "series of strategic coordinates and various symbolic entities within the coordinates." The conquest of space, to borrow from one popular title of the period, was reciprocally related to Earth-bound events such as the control of nature and culture.[18]

This relationship took several forms. The convergence of earth scientists during the early Cold War produced advances in geodesy, cartography, and photogrammetry that led directly to the clandestine CORONA satellites. These were vehicles for the collection of increasingly important *technical intelligence*, the abstracted spatial science gaining support within American intelligence agencies. The CORONA project was designed to replace lower-flying reconnaissance ventures that were growing increasingly dangerous, but grew into a key piece of more recent remote sensing and geographic information systems. The early spark for the invention of accuracy was a trove of geodetic data retrieved from German storage sites in the race for technoscientific information and experts, staged as the Third Reich collapsed, known as Project Paperclip.

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[18] Michel Foucault, "The Eye of Power," in Colin Gordon, ed., *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977* (New York: Pantheon, 1980), pp. 146-165; Richard K. Ashley, "The Eye of Power: The Politics of World Modeling," *International Organization* 37.3 (1983), pp. 495-535; Michael J. Shapiro, "That Obscure Object of Violence: Logistics and Desire in the Gulf War," in David Campbell \ Michael Dillon, eds., *The Political Subject of Violence* (Manchester; Manchester University Press, 1993), pp. 114-136; the quote is from p. 118; Denis Cosgrove, "Contested Global Visions: *One-World, Whole-*

New mapping facilities built in the United States by the military branches during the Second World War shifted to address the expanding and ultimately planetary map datums required to suit the range of bombers and ICBMs, but also the globalization of strategic sites. Eisenhower's 'Open Skies' proposal of 1955 was the public acknowledgment that global surveillance was a necessity, but after it was rejected by the Soviet Union, both states pursued secret observation machines instead (CORONA and ZENIT).[19]

By the end of the 1950s, new understandings of geodesy were but a sliver of the booming field of 'space science'. The Soviet and American satellite programs, moreover, were nominally part of the International Geophysical Year (IGY), an exercise in global scientific practice scheduled from July 1957 to December 1958. Again, the internationalist impulses of the IGY ran afoul of Cold War geopolitics. IGY principles, and the "freedom of space," were used as a non-military justification for the American satellite program. The American armed forces established and maintained monitoring stations in the Arctic and other key locations.[20] Eisenhower's administration fully understood that the Soviet Union was doing the same, and, unlike many in Congress, the media, and the public, the President and his staff showed little alarm when Sputnik was

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Earth, and the Apollo Space Photographs," *Annals of the Association of American Geographers* 84.2 (1994), pp. 270-294; Wily Ley, *The Conquest of Space* (New York: Viking, 1949).

[19] John Cloud, "Imagining the World in a Barrel: CORONA and the Clandestine Convergence of the Earth Sciences," *Social Studies of Science* 31.2 (2001), pp. 231-251; Donald MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* (Cambridge: The MIT Press, 1990); John Cloud, "Crossing the Olentangy River: The Figure of the Earth and the Military-Industrial-Academic Complex, 1947-1972," *Studies in the History and Philosophy of Modern Physics* 31.3 (2000), pp. 371-404; Deborah Jean Warner, "From Tallahassee to Timbuktu: Cold War Efforts to Measure Intercontinental Distances," *Historical Studies in the Physical and Biological Sciences* 30.2 (2000), pp. 393-415; R. Cargill Hall, "Strategic Reconnaissance in the Cold War," *Prologue* 28.2 (1996), pp. 107-125. For a discussion of strategy and the ICBM, see Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983), pp. 117-120. CORONA's first successful mission was not until August 18, 1960.

[20] Joseph Manzione, "'Amusing and Amazing and Practical and Military': The Legacy of Scientific Internationalism in American Foreign Policy, 1945-1963," Diplomatic History 24.1 (2000), pp. 21-55; the quote is from p. 50; Allan A. Needell, "Preparing for the Space Age: University-Based Research, 1946-

orbited. The IGY, moreover, was the brainchild of Lloyd Berkner, the influential broker between scientific and military communities mentioned at several points in this dissertation. Berkner was obsessed with the human *challenge* to the secrets of an external physical environment, and his "expansive technocratic vision" fit neatly with both the IGY initiative and the environment of space more generally. His interest in the tensions between national survival and principled internationalism in science dated to at least 1950, when he produced a report for the State Department on *Science and Foreign Relations*. As was the case with so many documents and studies during the early Cold War, Berkner's unclassified submission contained a secret appendix, which boldly discussed the importance of scientists as "intelligence-gatherers."[21]

In a substantial number of publications and speeches before and after the IGY, Berkner advertised 1957 as the year that Americans would be, or had been, "catapulted into a three-dimensional geography of the universe." Since human bodies were not yet in space, Berkner also heralded the understanding gained by spreading authorities out over the surface of the Earth during the IGY: "they must observe at the same time; they must make the measurements according to its agreed standards. Only then can we understand the gross events that encompass the Earth and affect us all." To scrutinize the whole of the earth, Berkner acknowledged that certain inaccessible regions demanded "high

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1957," *Historical Studies in the Physical Sciences* 18.1 (1987), pp. 89-109; Lloyd V. Berkner, "Assault on the Secrets of the Earth," *New York Times Magazine* (January 27, 1957), pp. 15, 40, 42-43.

[21] Allan A. Needell, *Science, Cold War, and the American State: Lloyd V. Berkner and the Balance of Professional Ideals* (Amsterdam: Harwood, 2000), pp. 147, 297; Lloyd V. Berkner, *Science and Foreign Relations: International Flow of Scientific and Technological Information* (Washington: Department of State, 1950); Berkner, "Man Attempts to Understand his Environment," *The Journal of Astronautics* 3.3-4 (Autumn-Winter 1956), pp. 53-58.

adventure." The same was true of space; Berkner could not help including a discussion of "interplanetary travel" in a 1959 address to the American Geographical Society.[22]

Lessons learned from travels in other hostile realms were quite directly applied to the hypothetical zones of galactic exploration. In Washington, DC's National Air and Space Museum, a prominent quote from 1953 still greets visitors to a room stuffed with displays of cyborgs past and present: "the protective envelope that the well dressed traveler must don before he ventures into space presents many problems of engineering that require study and solution" (Figure 36).[23] Little wonder, then, that theories of human engineering and psychology were drawn from ongoing Arctic experiences, in particular, to illustrate the perils of presence in outer space, or that the science fiction writer Robert A. Heinlein could draft, in 1949, the outline of a "Baedeker of the Solar System."[24] But *Forbidden Planet* – not to mention the fraught history of space travel – should remind us that the confidence of those entering and contemplating space as a strategic environment was profoundly fragile. The same was true of the commanding views of satellites or anticipated space shuttles: they were also intermediate positions, facing a whole Earth but also a universe of new regions that rendered one world comparatively diminutive and time-space compression paradoxical. Both American humans and machines were challenged, in return, by multiple manifestations of others or quasi-objects that could not be placed within an order of control, always disturbing the boundaries of individual and national identity from the inside.

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[22] "Science in Space," in Box 18, Folder "LVB Speeches and Papers: RI [Rockefeller Institute] Sigma Xi Lecture, 3 March 1959," Lloyd V. Berkner Papers, Library of Congress Manuscript Division, Washington, DC, p. 2; Berkner, "Man Attempts to Understand his Environment," p. 53; Berkner, "Geography and Space," *The Geographical Review* 59.3 (1959), pp. 305-314.

[23] The statement is attributed to Donald Menzel, who was, at the time, the Acting Director of Harvard's College Observatory. He was also a prolific writer on space in the 1950s.

In March 1958 James Killian's Presidential Science Advisory released a report titled "Introduction to Outer Space." Among the key contributors was Edwin Land, the brilliant founder of Polaroid and a frequent contributor to Cold War reconnaissance projects, including the design of the U-2 spy plane. The report listed four factors that gave "importance, urgency, and inevitability" to considerations of technologies that could reach space: "the compelling urge of man to explore, and to discover; the defense objective; the factor of national prestige; and the new opportunities space technology offers for scientific observation and experiment." The landscape of space may have been novel. But not only were these overlapping rationales the stuff of *Forbidden Planet*'s anticipatory vision, they were also all present in every strategic environment I have already considered. Indeed, the drive to map and classify Earth's surfaces, to maintain security, enhance the status of national culture "among the peoples of the world," turn regions into scientific laboratories, and translate laboratory constructions into global models all reflect earlier ambitions, many of them colonial.[25] They were not Cold War phenomena. And yet only in the United States during the 1940s and 1950s were these factors all aligned under the banner of militarism – a condition that was not static but nonetheless reflected the powerful alignment of scales and technologies, as well as theories and practices, in specific spaces.

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[24] Robert A. Heinlein, "Baedeker of the Solar System," *The Saturday Review of Literature* 32.52 (December 24, 1949), pp. 9-10.

[25] Killian, *Sputnik*, pp. 124, 289. The full "Introduction to Outer Space" is reprinted as Appendix Four in Killian's book. In December 1959 a *Newsweek* article claimed that "the moral energies that drove America to true greatness lately seem diluted." This weakness, however, would be alleviated by the "supreme adventure" of space travel. Quoted in Michael L. Smith, "Selling the Moon: The U.S. Manned Space Program and the Triumph of Commodity Scientism," in Richard Wightman Fox and T. J. Jackson Lears, eds., *The Culture of Consumption: Critical Essays in American History, 1880-1980* (New York: Pantheon, 1983), pp. 175-209; the quote is from p. 199.

Appendix: Figures

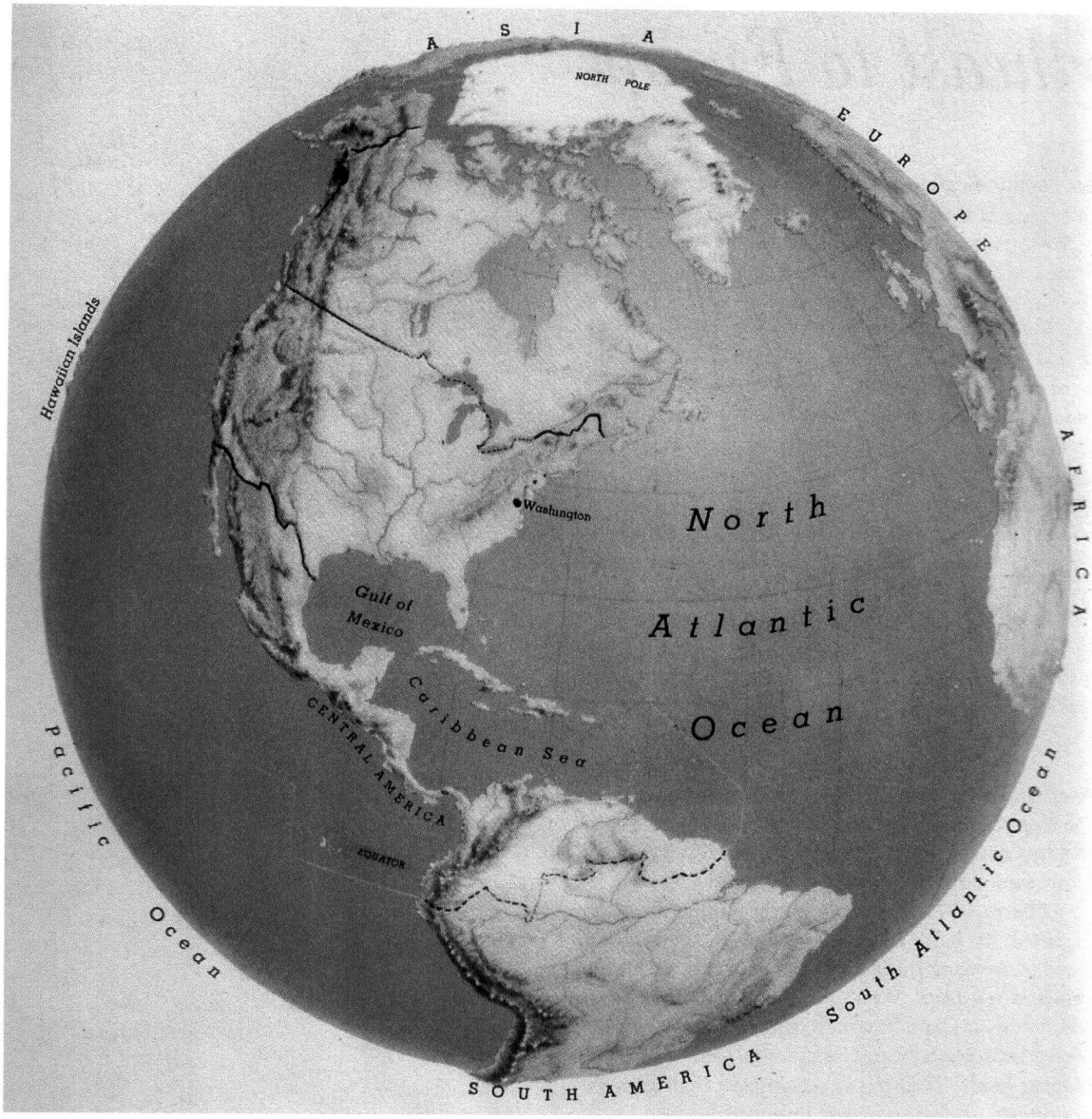
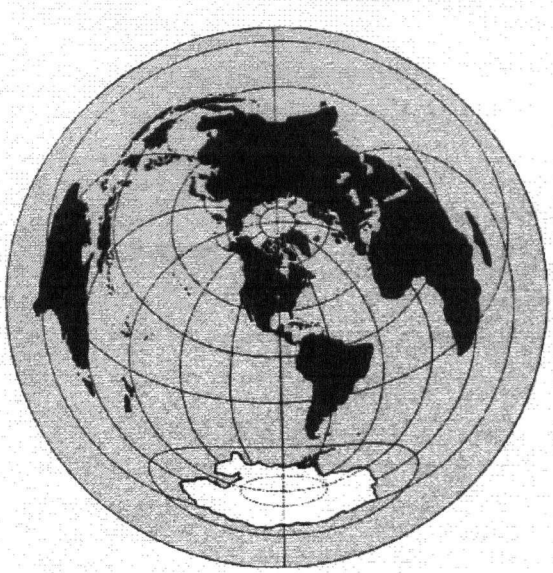
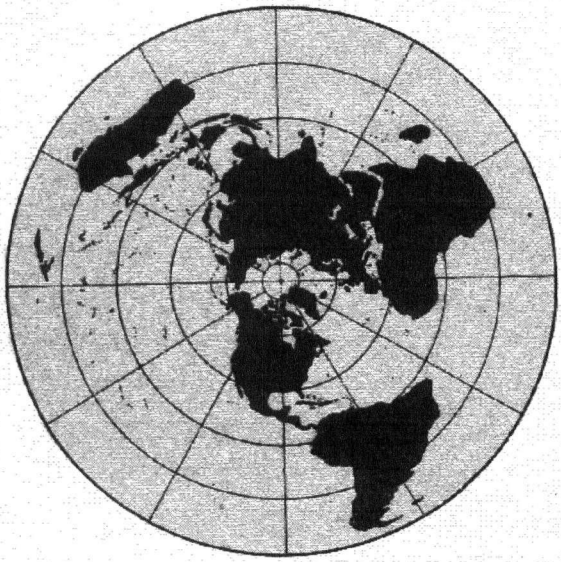


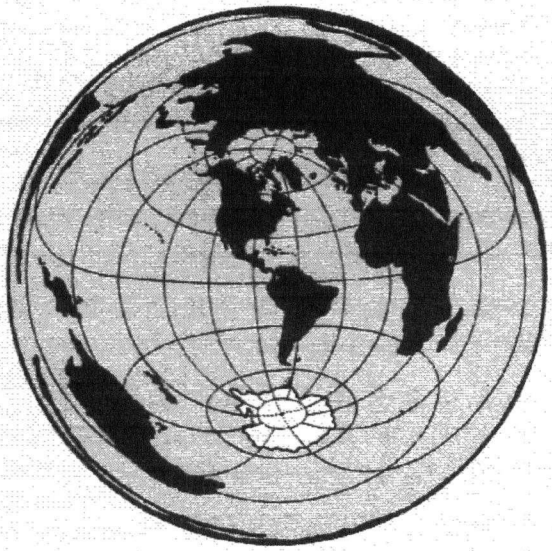
Figure 1 – "Outward from the U.S."
Harrison, *Look at the World* (1944), p. 13



MAP 13. CENTERED ON ST. LOUIS



MAP 14. CENTERED ON THE NORTH POLE



MAP 15. CENTERED NEAR THE PANAMA CANAL

Figure 2 – America Encircled
Spykman, *The Geography of the Peace* (1944), p. 20

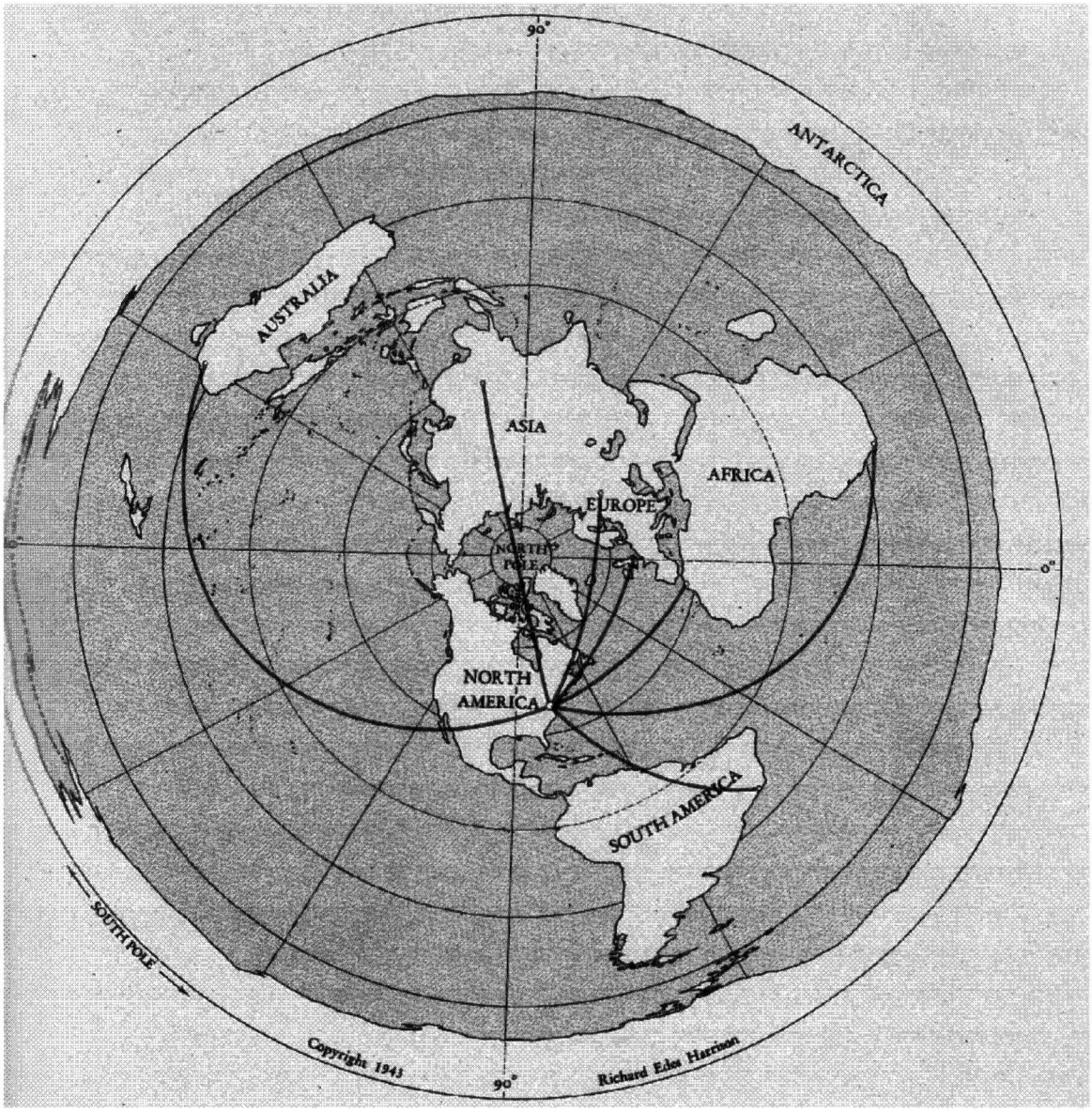


Figure 3 – "Polar Azimuthal Equidistant Projection" (Richard Edes Harrison)
Consolidated Vultee Aircraft Corporation,
Maps...and How to Understand Them (1943), p. 11

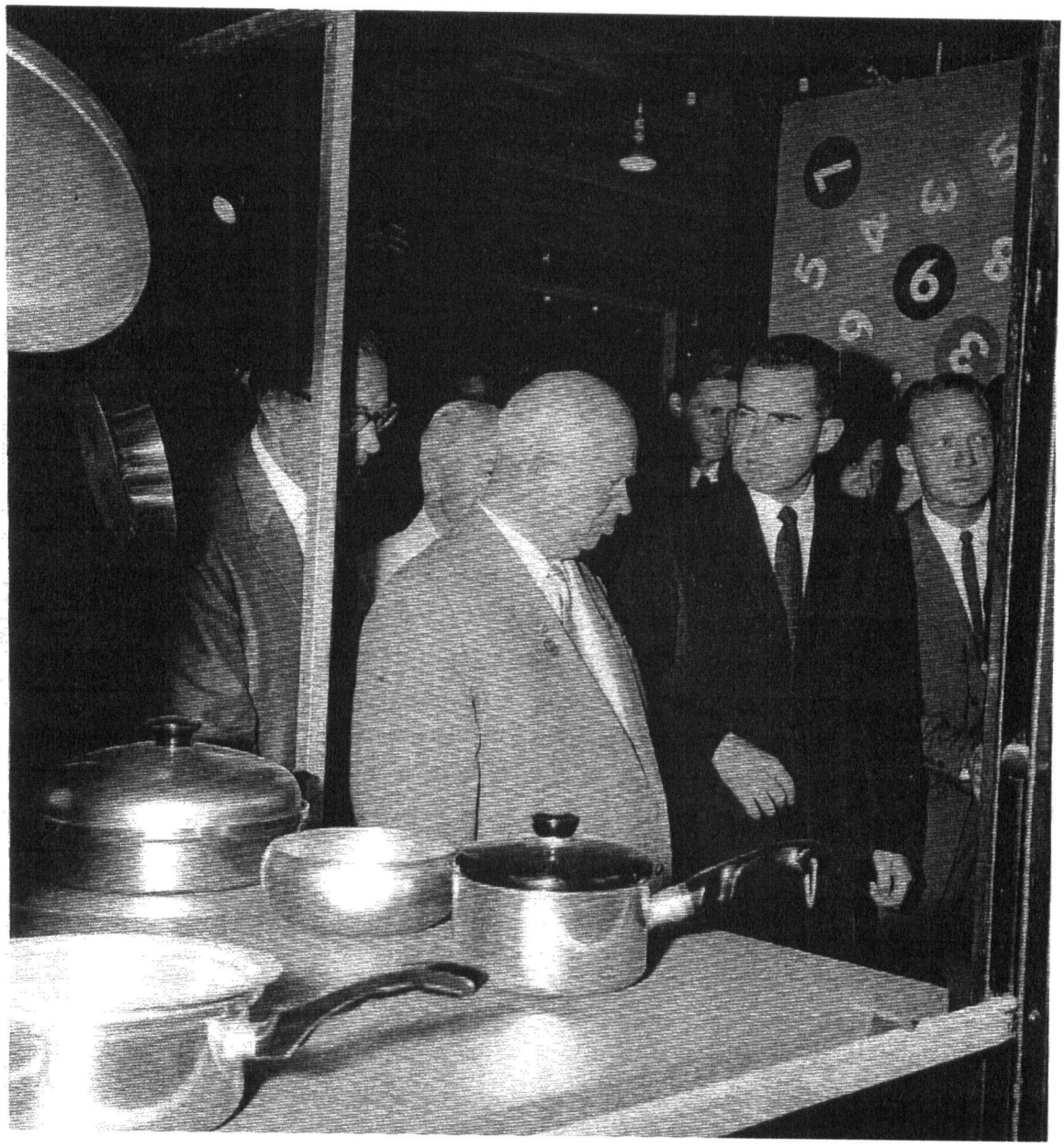


Figure 4 – Kitchen Debate (July 1959)
NARA Still Picture Division, RG 306, Series 306-RMN, Box 1, Photo 306-RMN-1-13

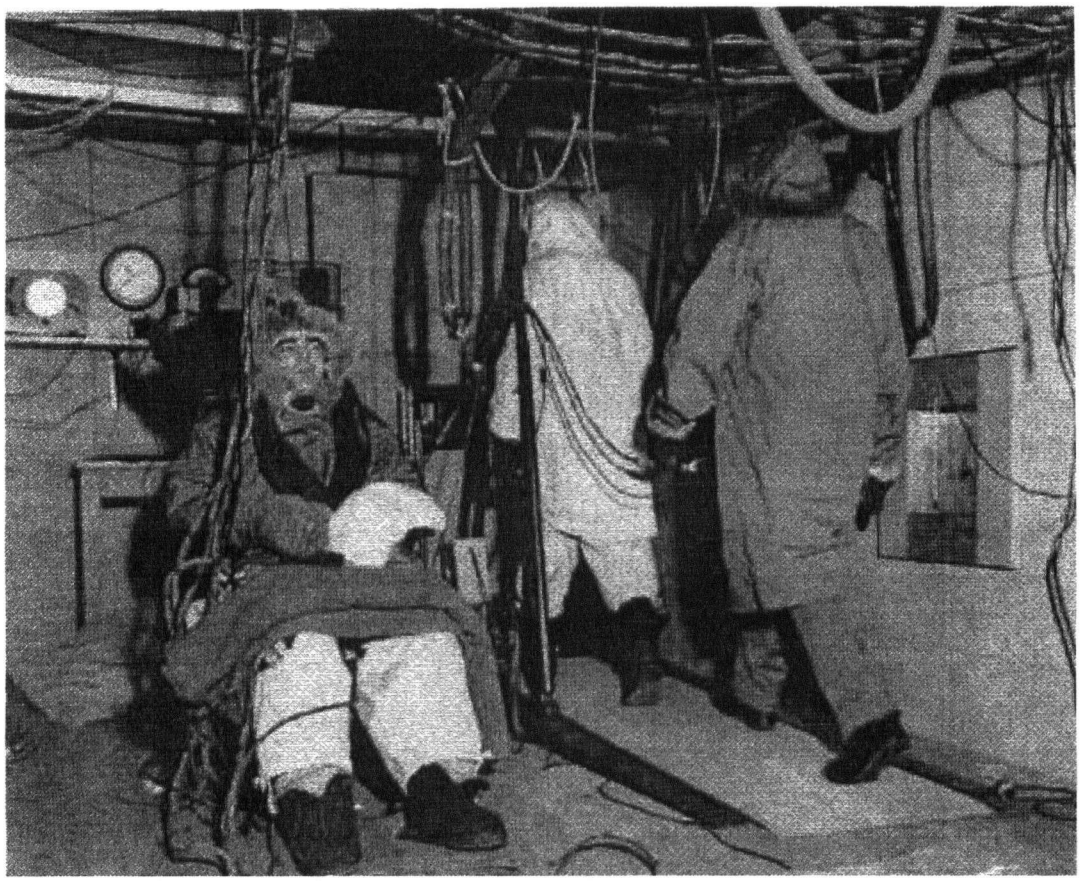
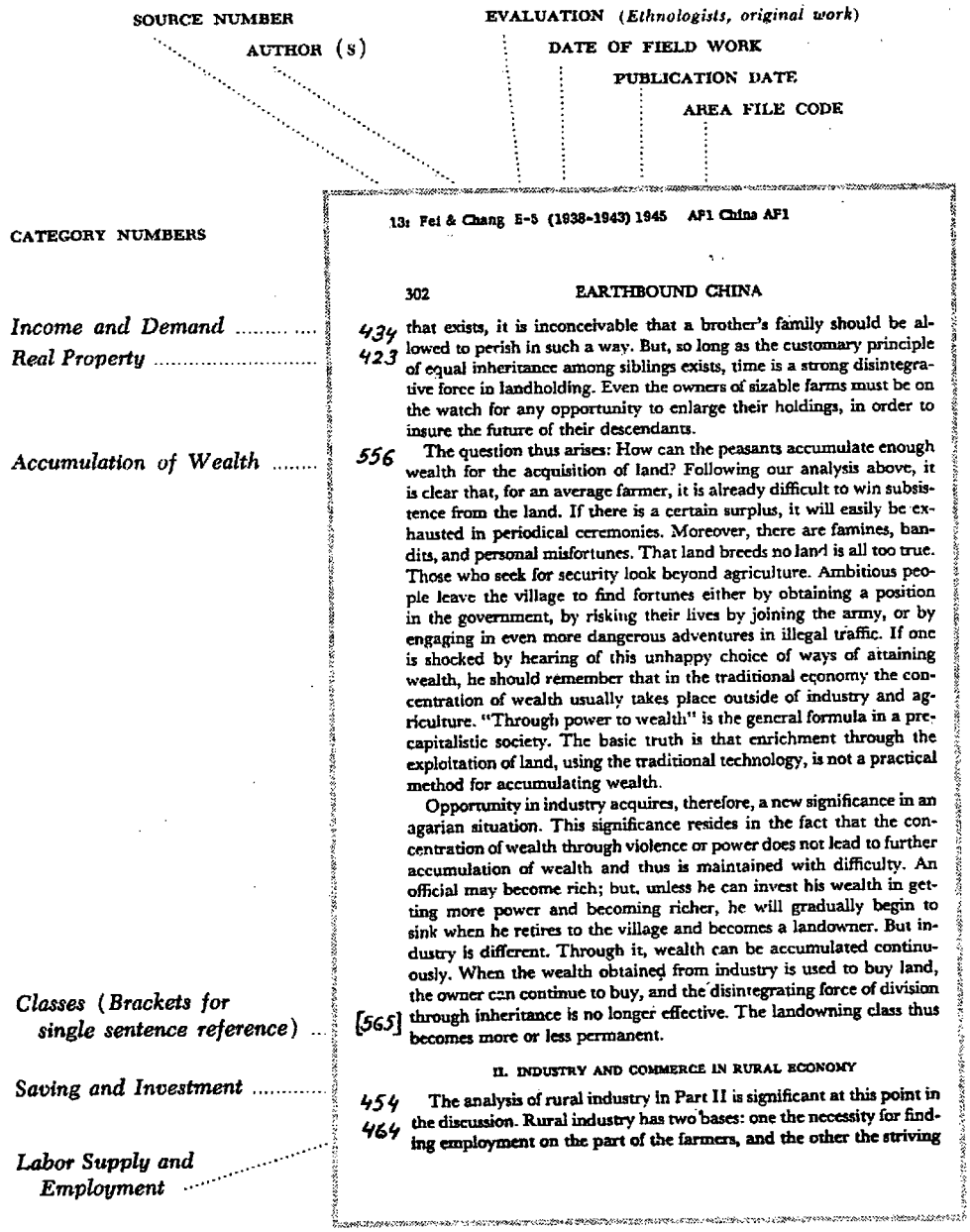


Figure 5 – Climate Laboratory, World War II
Simpitch, "Fit to Fight Anywhere," (1943), p. 235

SAMPLE FILE SLIP, SHOWING VARIOUS FEATURES RELATIVE TO FILING SYSTEM



(File slip reduced in size.)

Figure 6 – Sample HRAF File Slip
Human Relations Area Files, *Laboratory for the Study of Man* (1959), p. 14

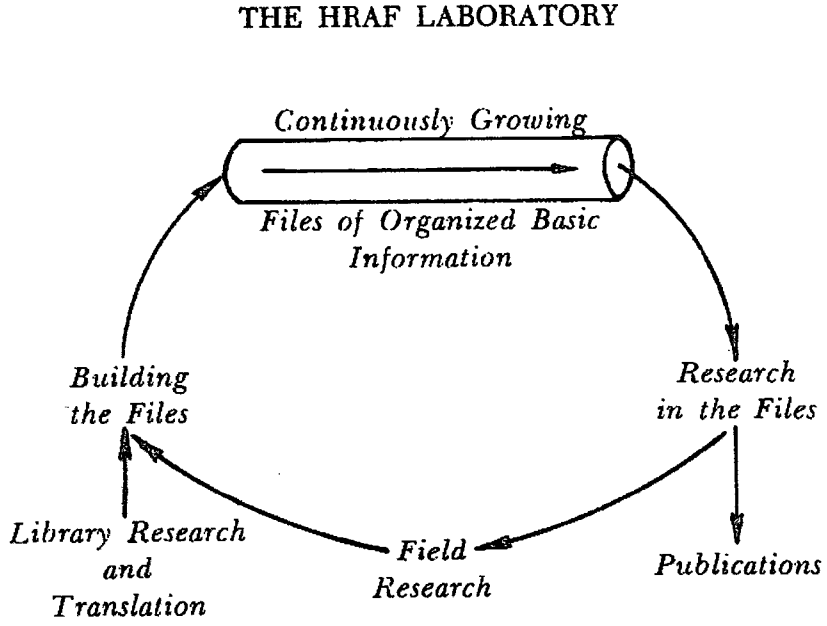


Figure 7 – "The HRAF Laboratory"
Human Relations Area Files, *Laboratory for the Study of Man* (1959), p. 35

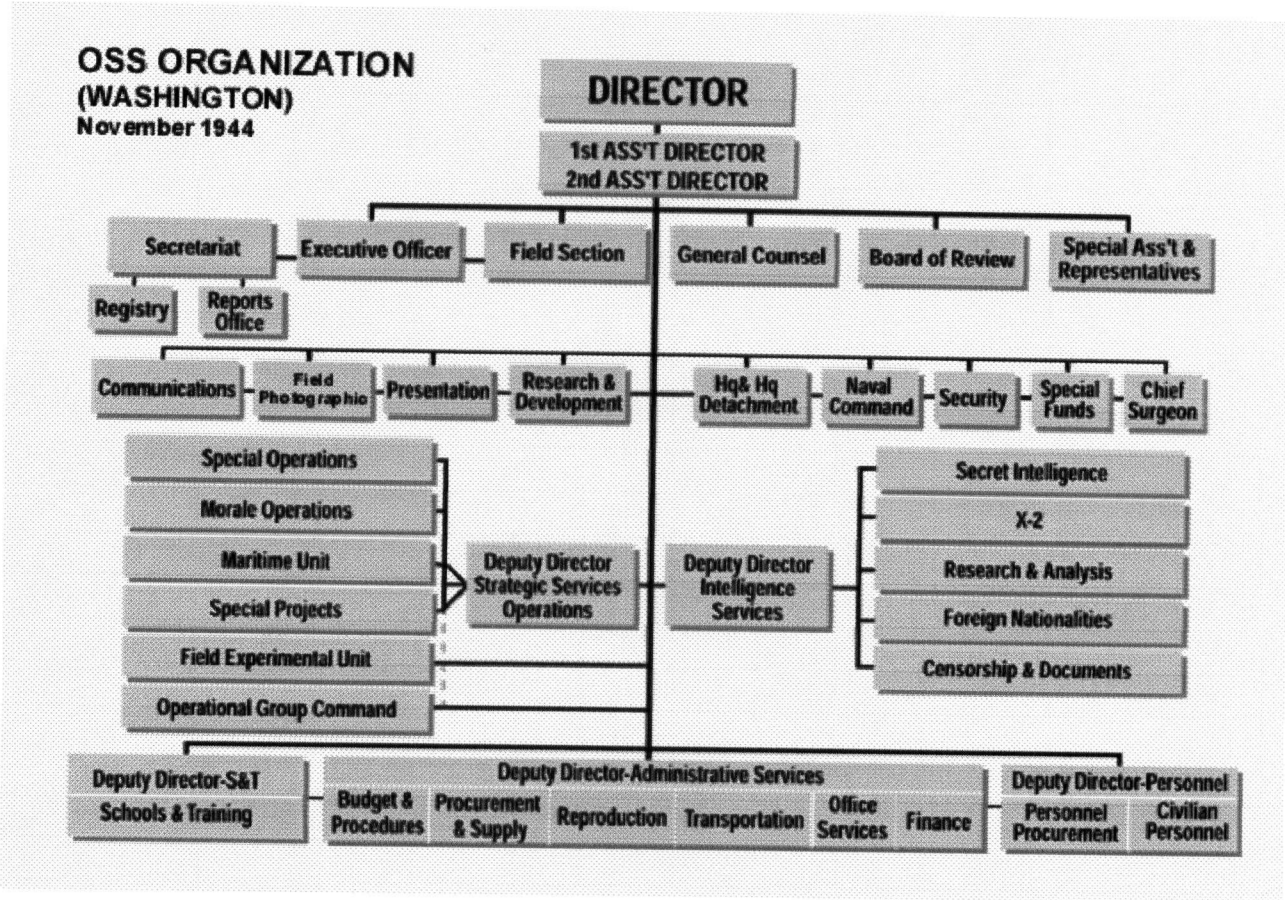


Figure 8 – "OSS Organization" (November 1944)
http://www.cia.gov/cia/publications/oss/art03.htm

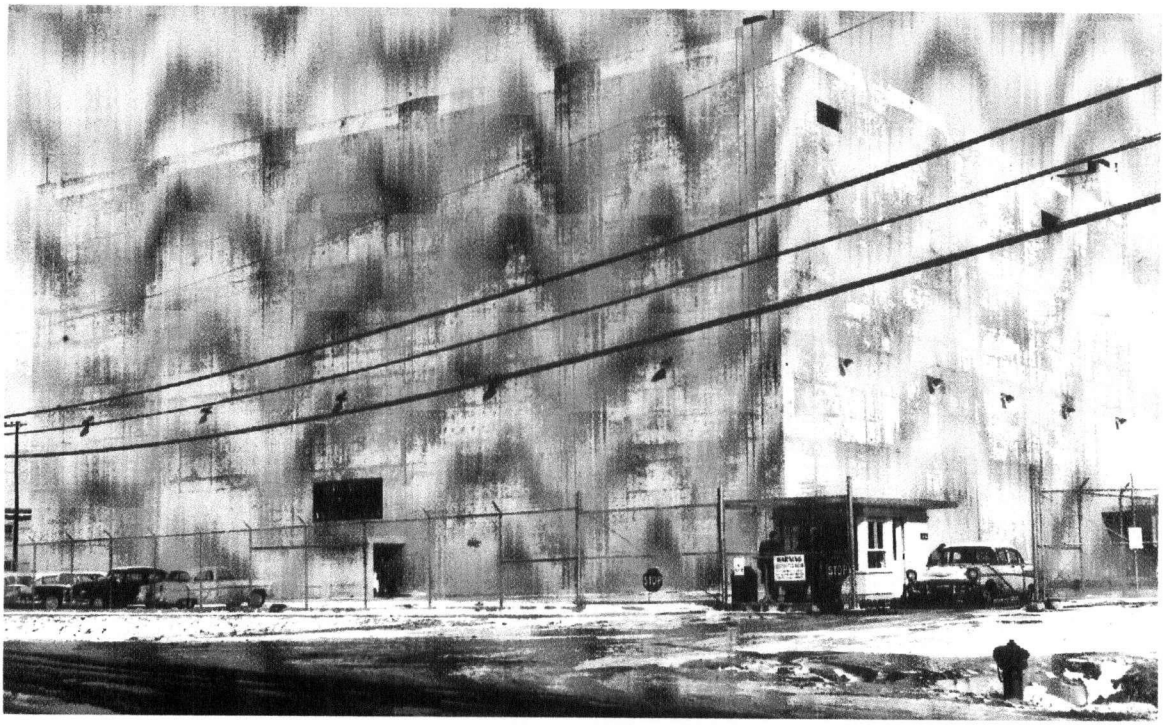


Figure 9 – SAGE Air Direction Center, McGuire Air Force Base, New York (n.d., 1958)
Lincoln Laboratory Archives

Figure 10 – SAGE Console (December 1958)
NARA Still Picture Division, RG 342, Series 342B, Box 839, Folder 342-B-03-003-14

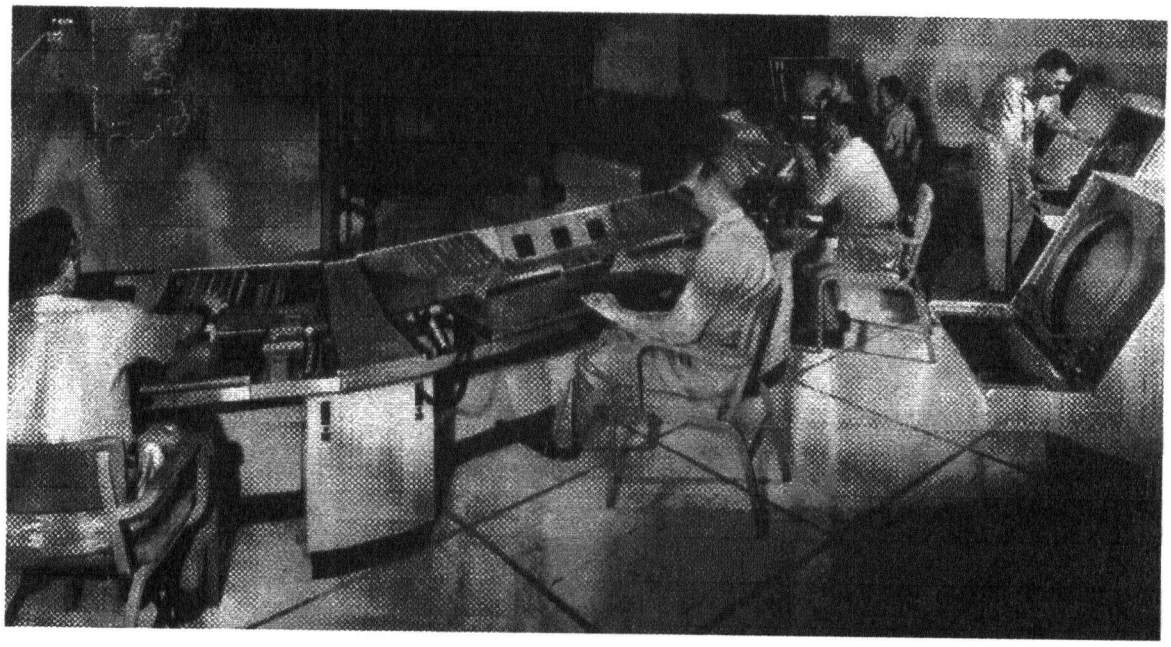


Figure 11 – "Sentinels of the Sky" (n.d., 1958)
Lincoln Laboratory Archives

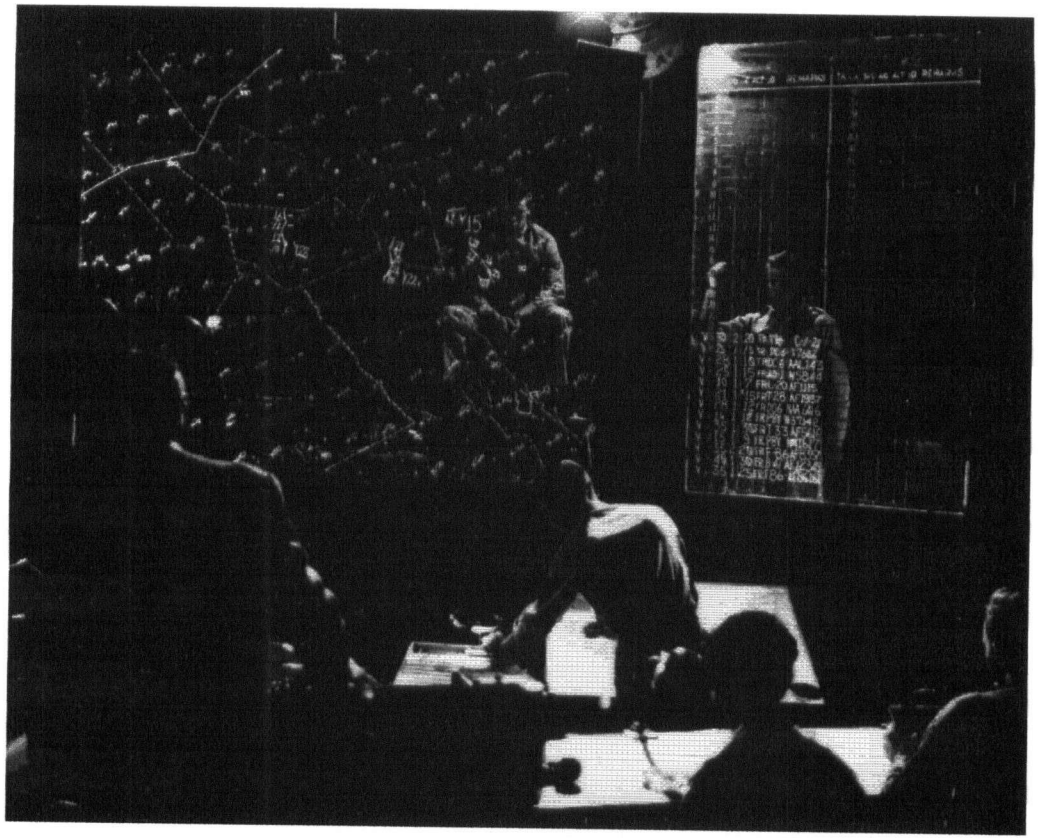


Figure 12 – Systems Research Laboratory, RAND Corporation (n.d., early 1950s)
RAND Corporation Library

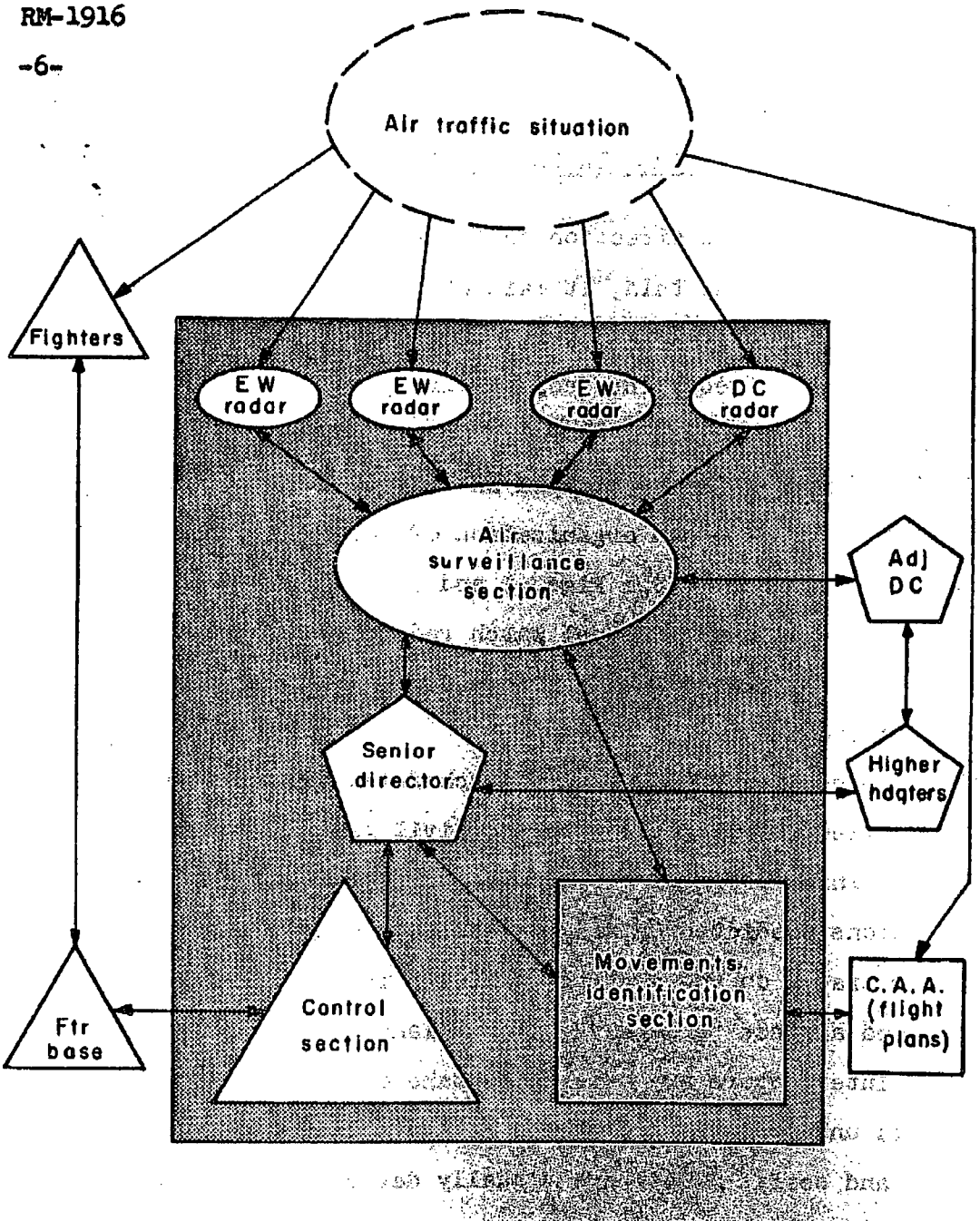


Fig. 1. Schematic Diagram of Direction Center Functions

This diagram shows the relations among several functions performed by the air-defense direction center: surveillance (ellipses), identification (squares), and interceptor control (triangles). The senior director -- responsible for supervision and decision-making -- the adjacent direction center, and higher headquarters are represented by pentagons. The unshaded portion includes the embedding organizations -- manned by experimenters -- and the environment from which the simulated system information inputs come.

Figure 13 – "Schematic Diagram of Direction Center Functions" (1960) Chapman, *Data for Testing a Model of Operational Behavior*, RAND Library, p. 6

Figure 14 – The U.S. Air Force at the Geographic North Pole (3 May 1952)
NARA Still Picture Division, RG 342, Series 342FH, Box 5004, Photo 4A-25288

Figure 15 – Operation North Star, Alaska (15 February 1954)
NARA Still Picture Division, RG 342, Series 342B, Box 377, Folder 342-B-10-041-6

Figure 16 – Flying Boxcars, Exercise Yukon (n.d., Winter 1947-48)
NARA Still Picture Division, RG 342, Series 342FH, Box 2132, Photo 4A-02373

From the Moses C. Shelesnyak papers, MS C 405, in the History of Medicine Division, National Library of Medicine. NOTICE: THIS MATERIAL MAYBE PROTECTED BY COPYRIGHT LAW (TITLE 17 U.S. CODE).

Figure 17 – Exercise Musk-Ox
M. C. Shelesnyak Papers, National Library of Medicine

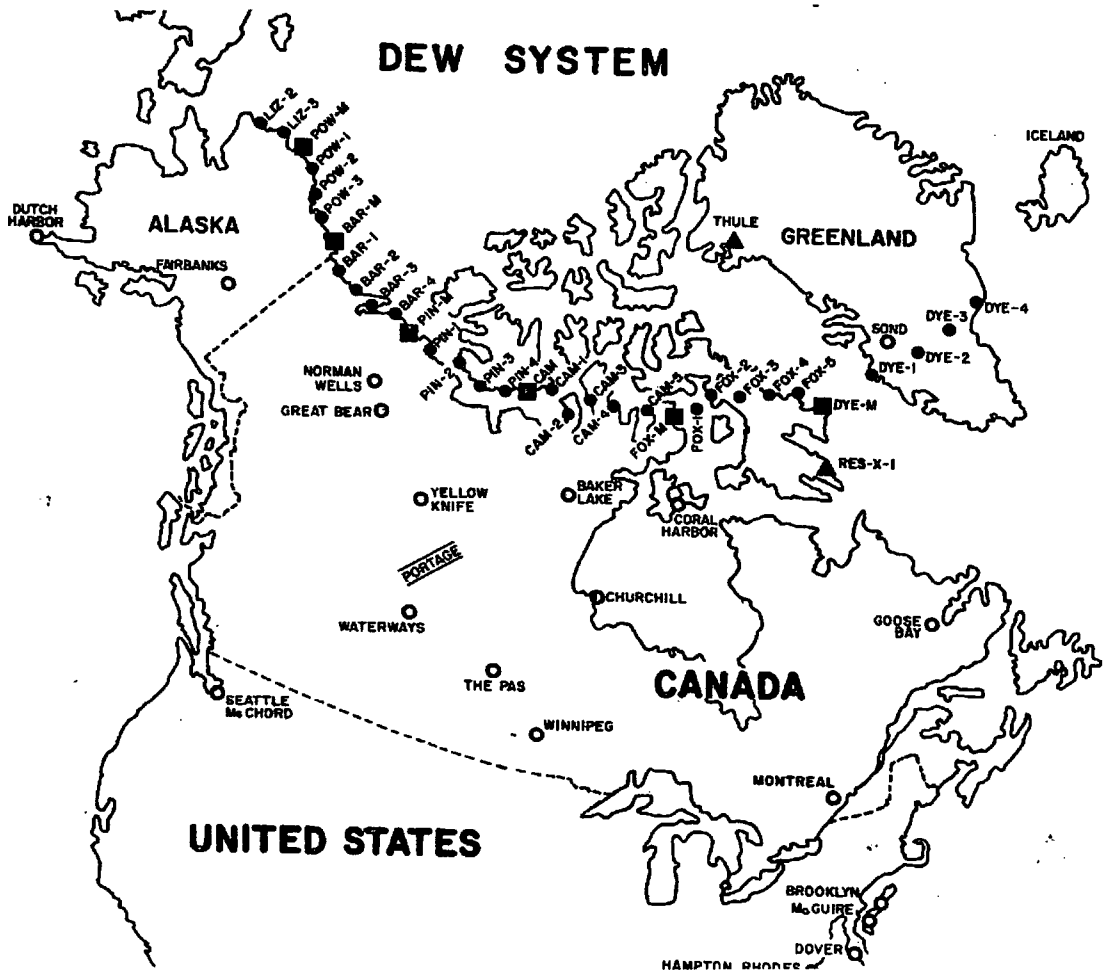


Figure 18 – "The DEW System"
Federal Electric Corporation, *The DEW System* (n.d., 1958-59), n.p.

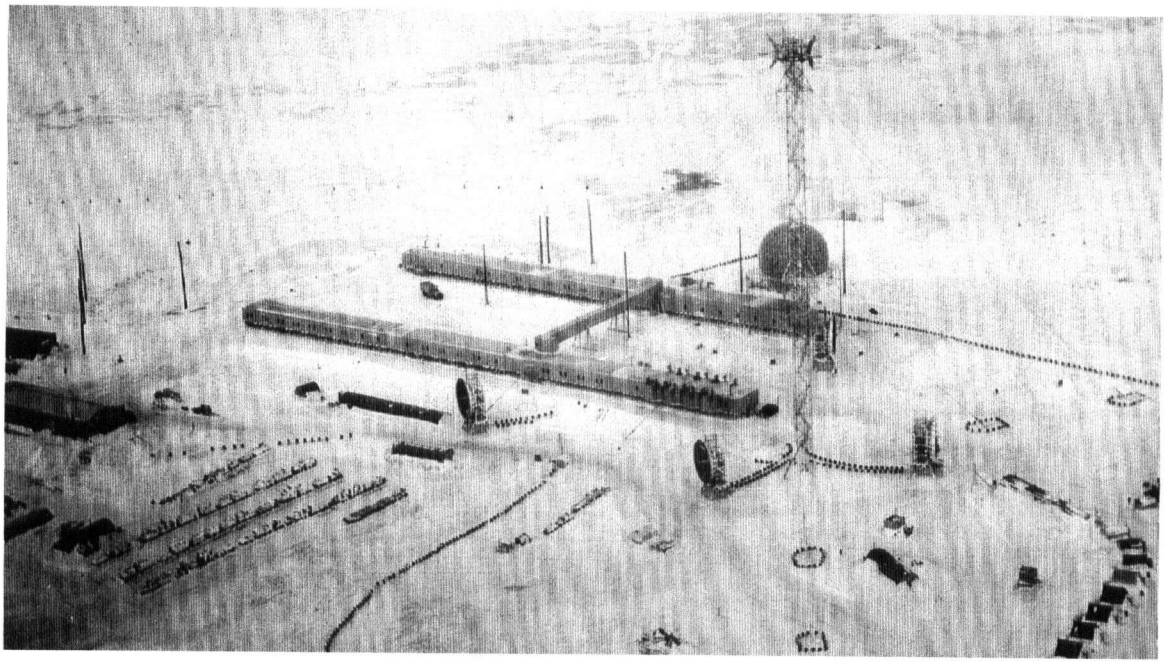


Figure 19 – "A Typical DEW Line Station" (8 August 1957)
NARA Still Picture Division, RG 342, Series 342B, Box 357, Folder 342-B-10-015-2

Figure 20 – Visitors from the South: DEW Line, Frobisher Bay (28 March 1956)
NARA Still Picture Division, RG 342, Series 342FH, Box 5000, Photo 4A-24501

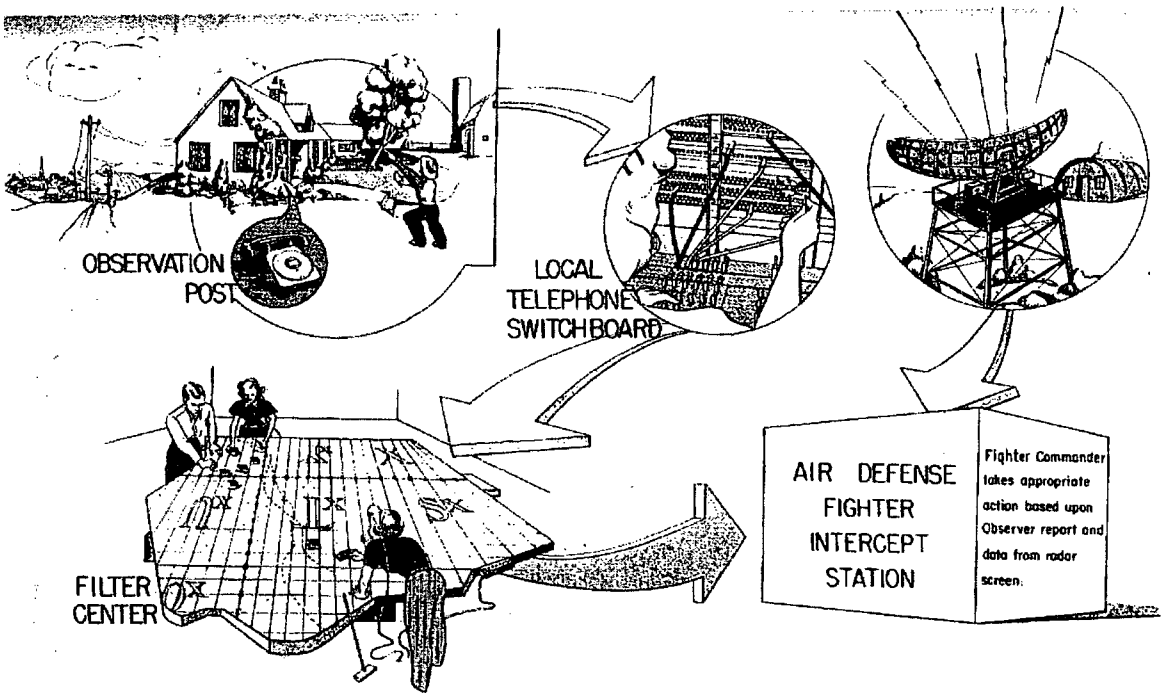


Figure 21 – The Defence Network
Office of the Secretary of Defense, Civil Defense Liaison,
The Aircraft Warning Service of the United States Air Force (1950), n.p.

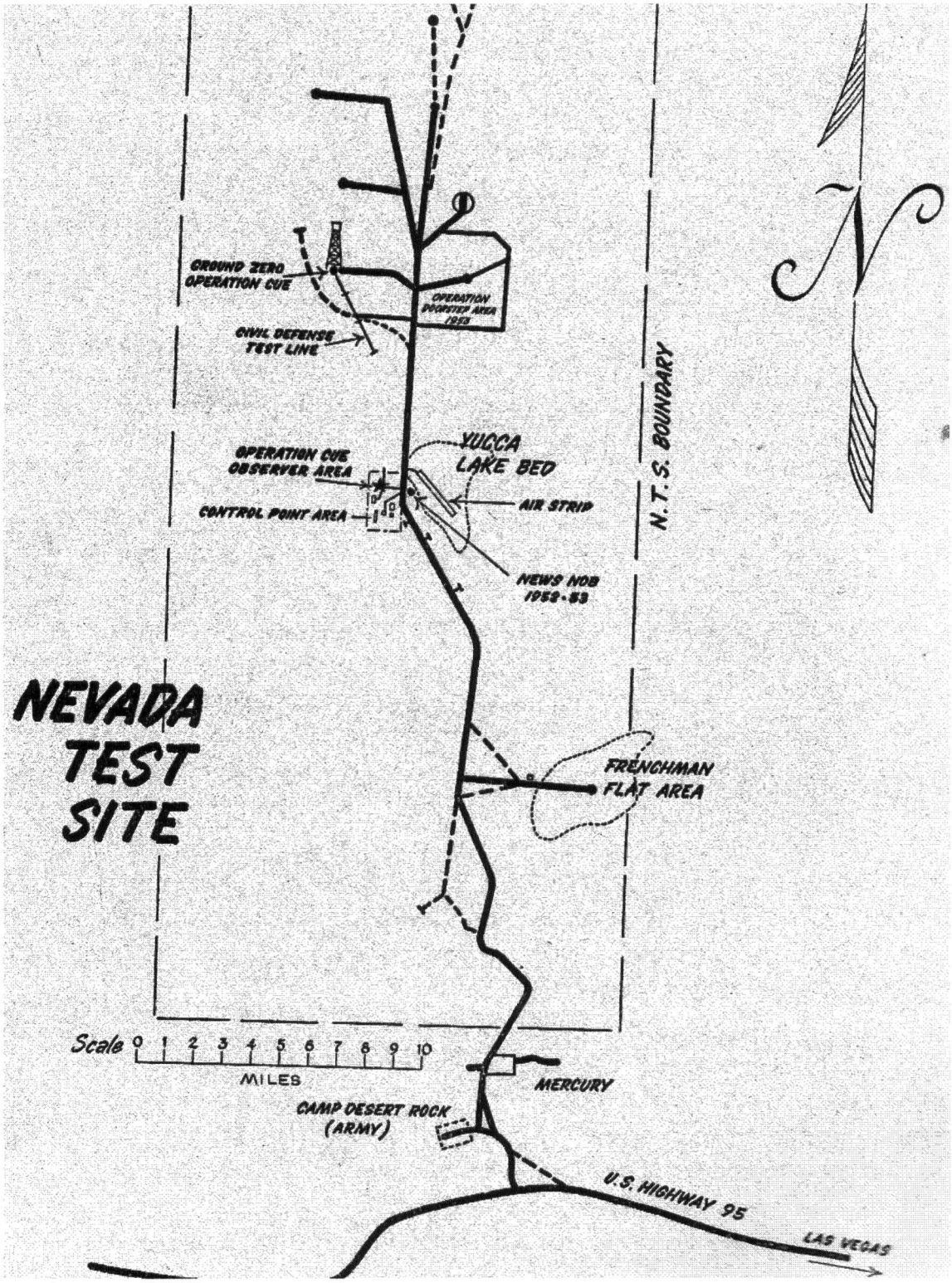


Figure 22 – Nevada Test Site
Federal Civil Defense Administration, *Operation Cue* (1955), back cover.

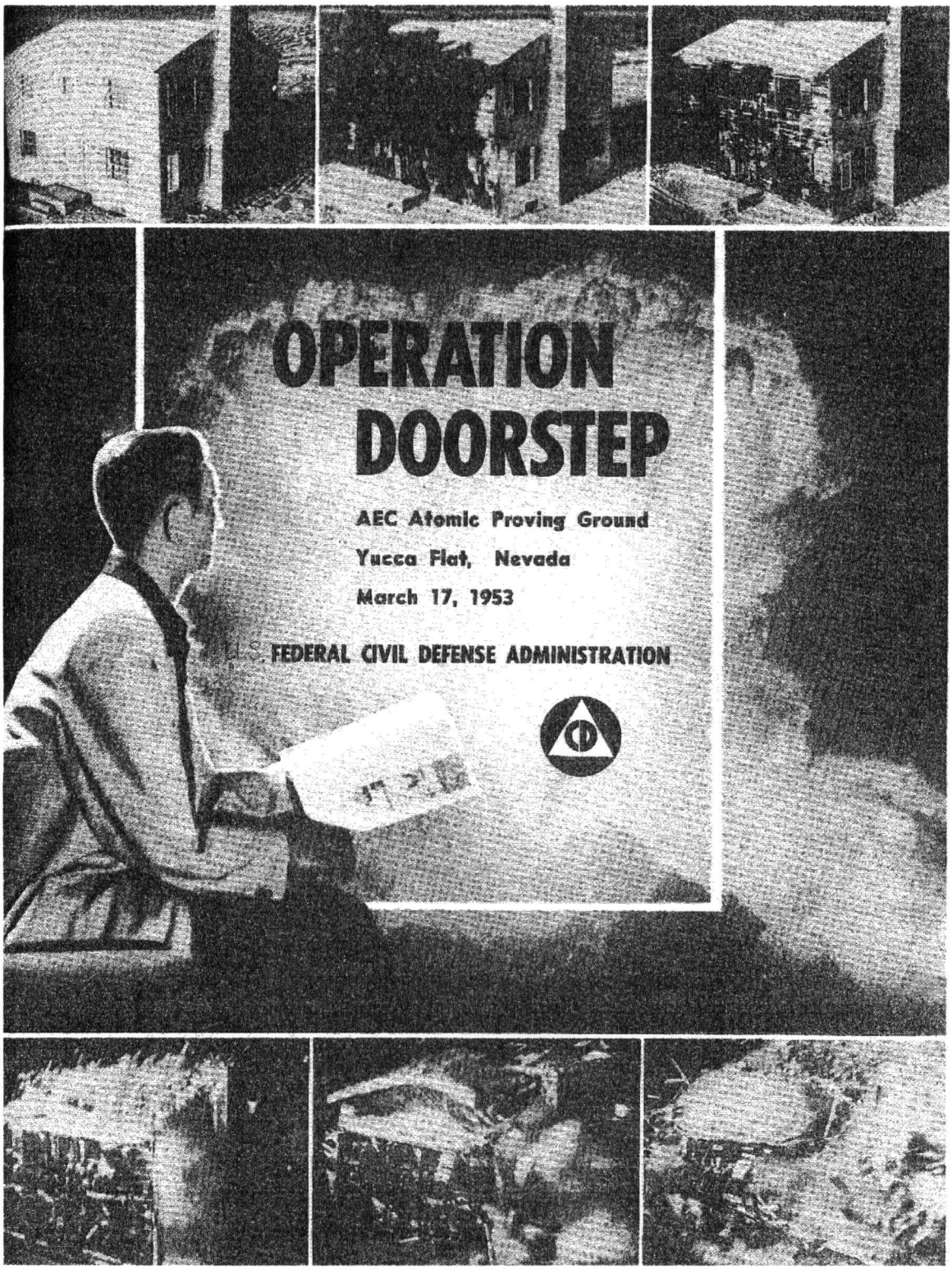
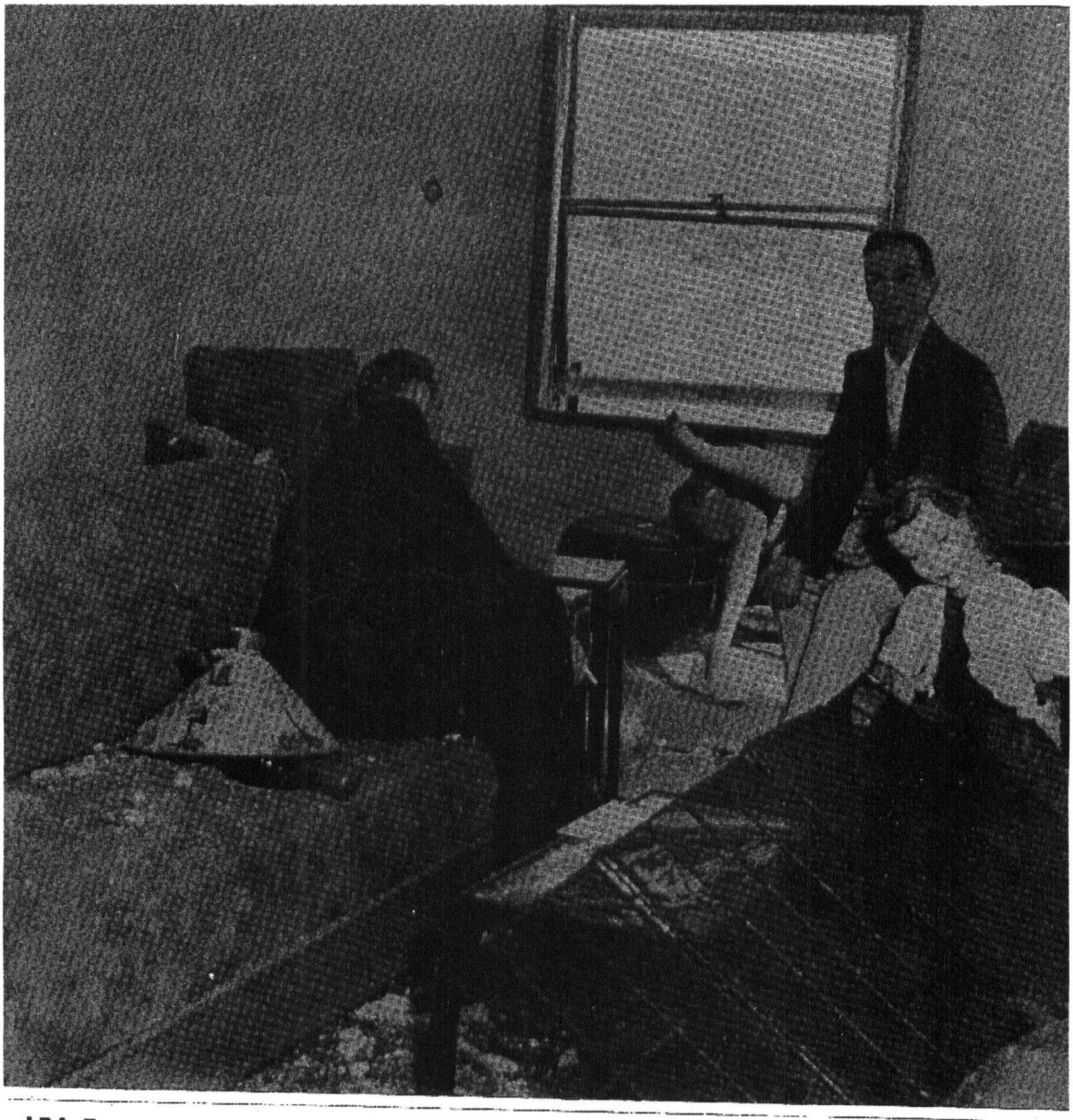


Figure 23 – Operation Doorstep
Federal Civil Defense Administration, *Operation Doorstep* (1953), cover



LRA–7

The family group in the living room of the 7,500-foot house after the blast. While some mannequins look comparatively undisturbed all showed marks from flying glass. The upright male mannequin had plaster chipped from both eyes. The little girl was severely marked around the forehead. (FCDA—Operation Doorstep—Yucca Flat, Nev., Mar. 17, 1953.)

Figure 24 – Operation Doorstep Family
Federal Civil Defense Administration, *Operation Doorstep* (1953), p. 27

Figure 25 – "Field Exercise Participants in Operation Cue…2 miles from Ground Zero"
NARA Still Picture Division, RG 304, Series 304-NT, Box 2, Folder 476

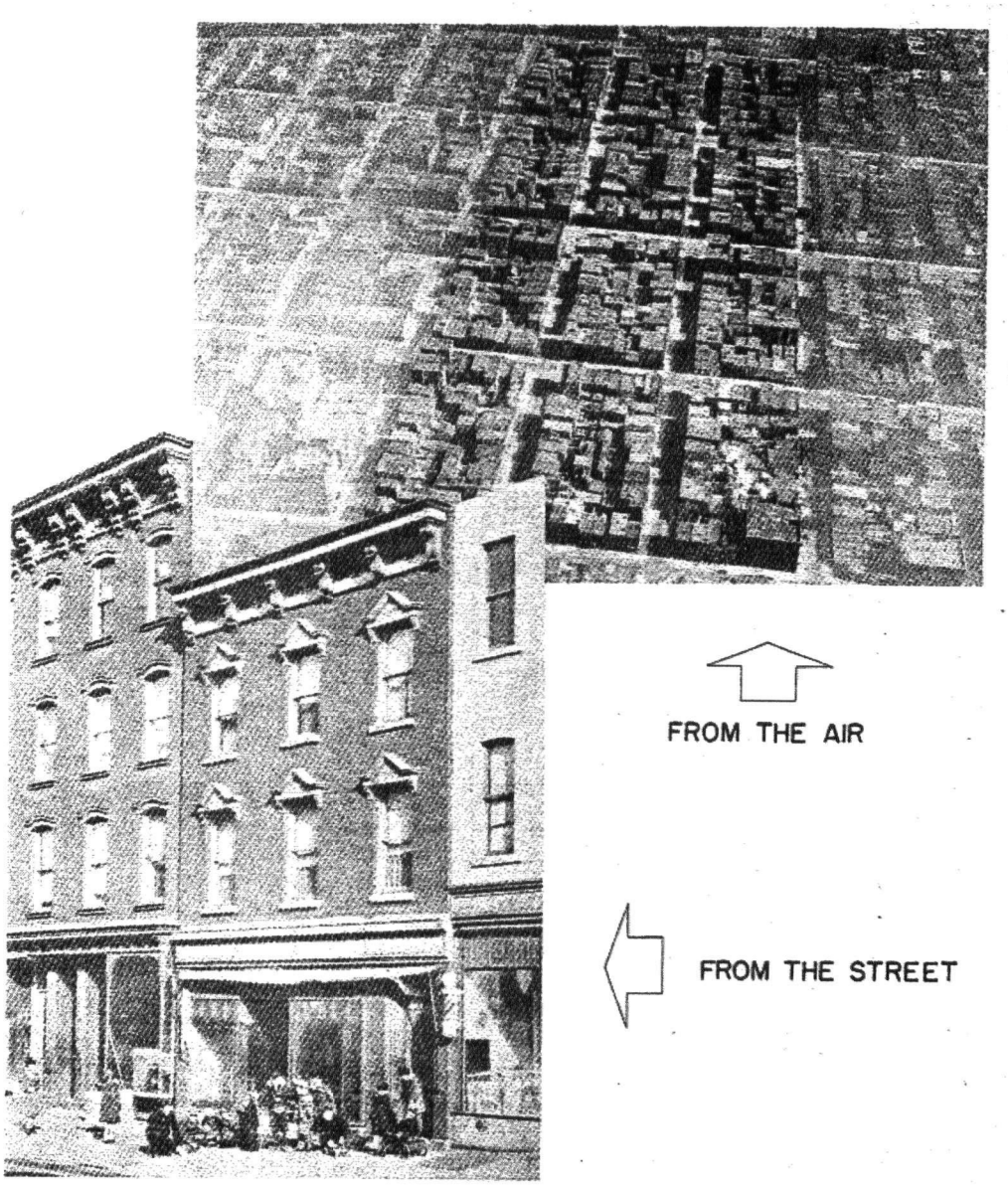


Figure 26 – Danger in Density
Report of the Project East River, Part II-B (1952), p. 33

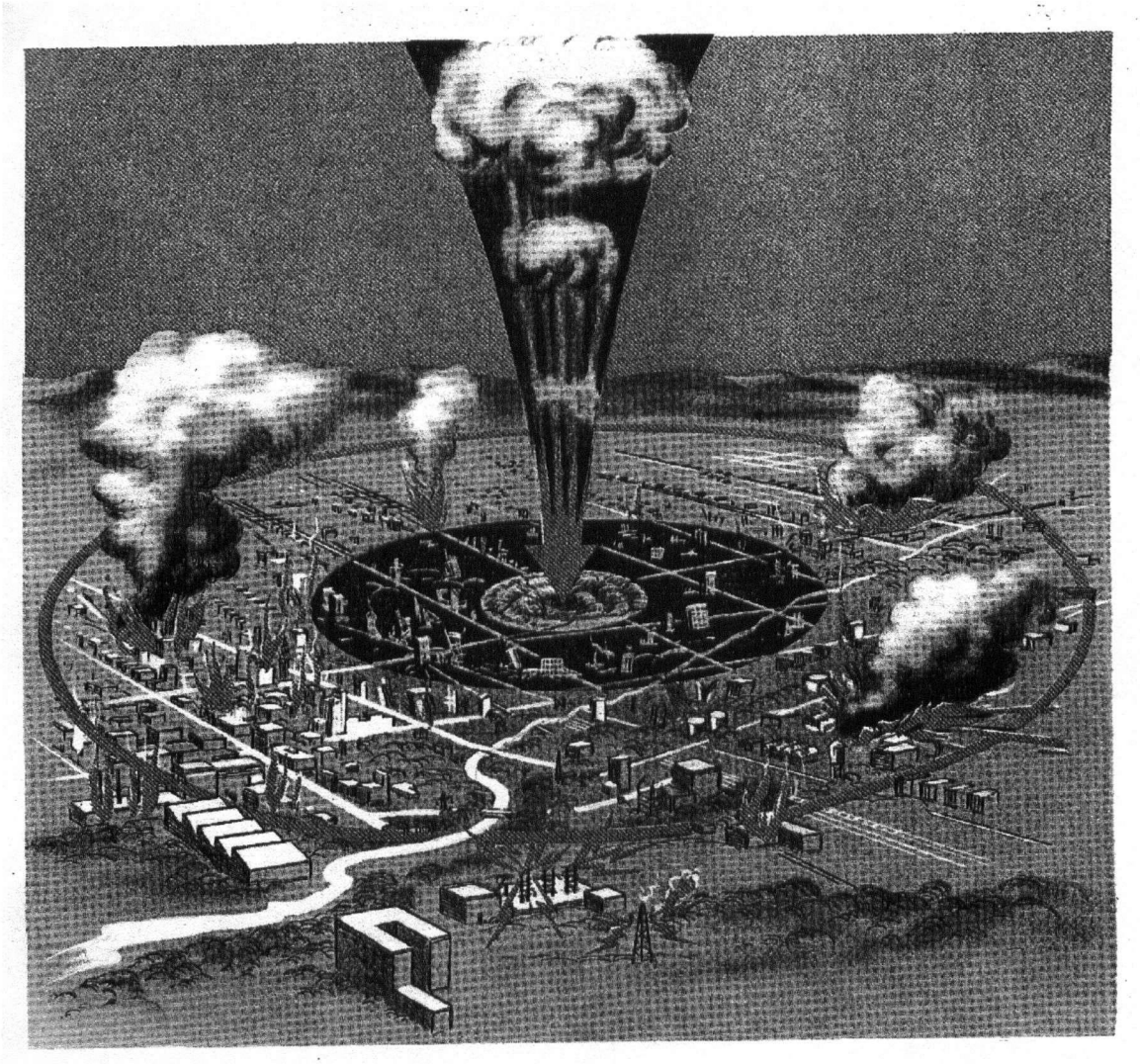


Figure 27 – Concentric Destruction
National Security Resources Board,
National Security Factors in Industrial Location (1948), p. 3

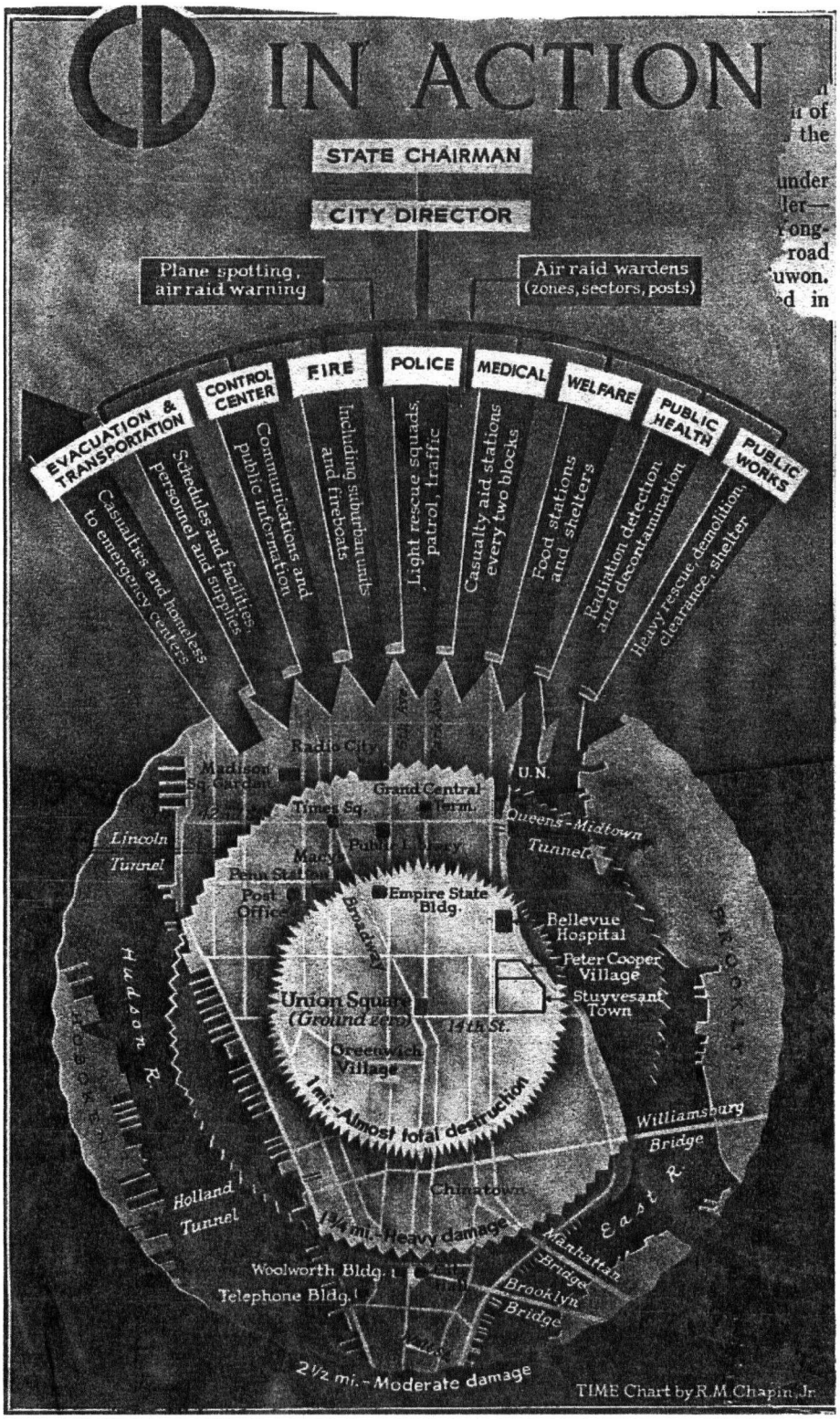


Figure 28 – Civil Defence in Action
Time October 2, 1950, p. 13.

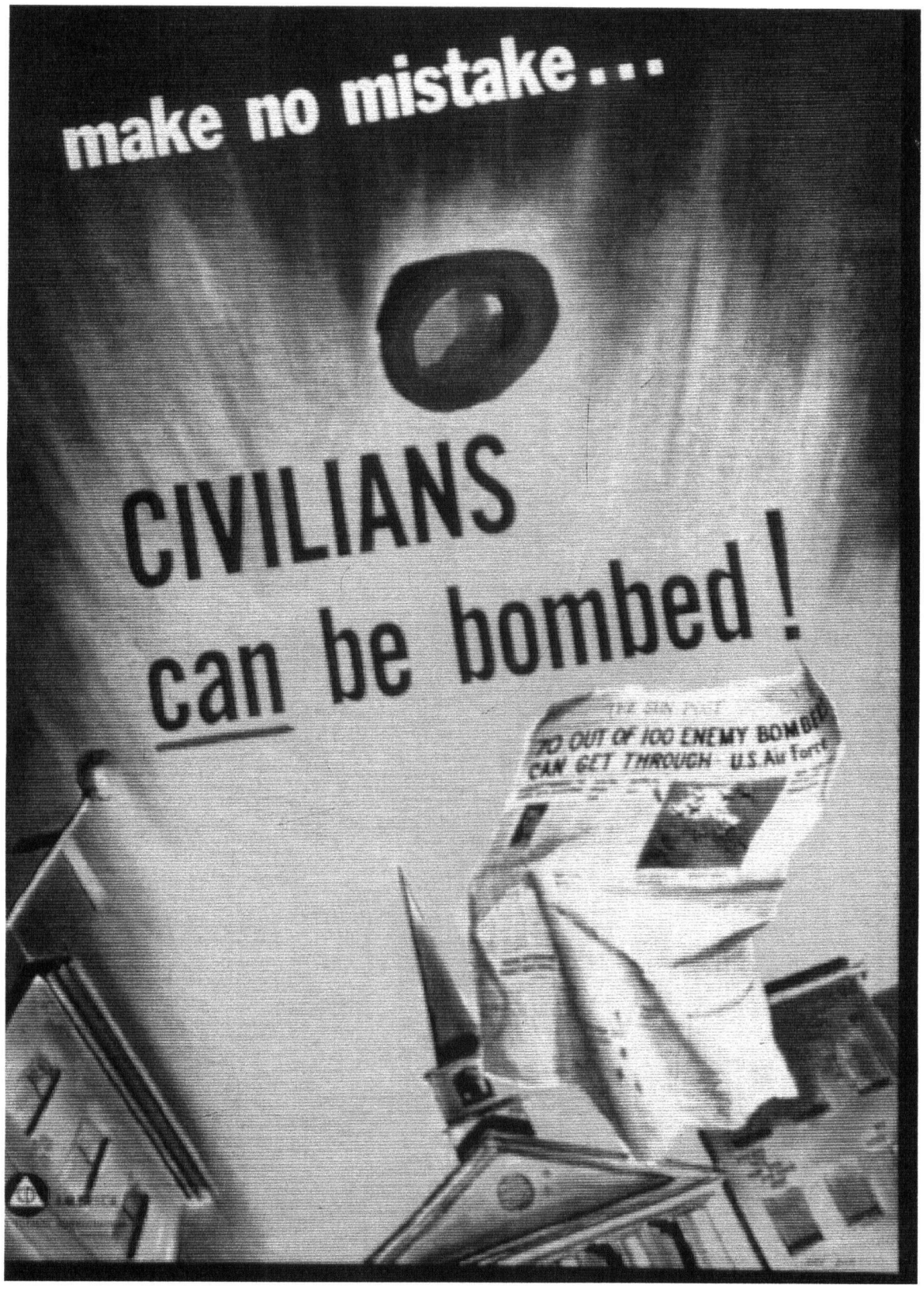


Figure 29 – "Make No Mistake" – Civil Defence Poster (1952)
NARA Still Picture, RG 304, Series 304-P-6, FCDA 1A-6

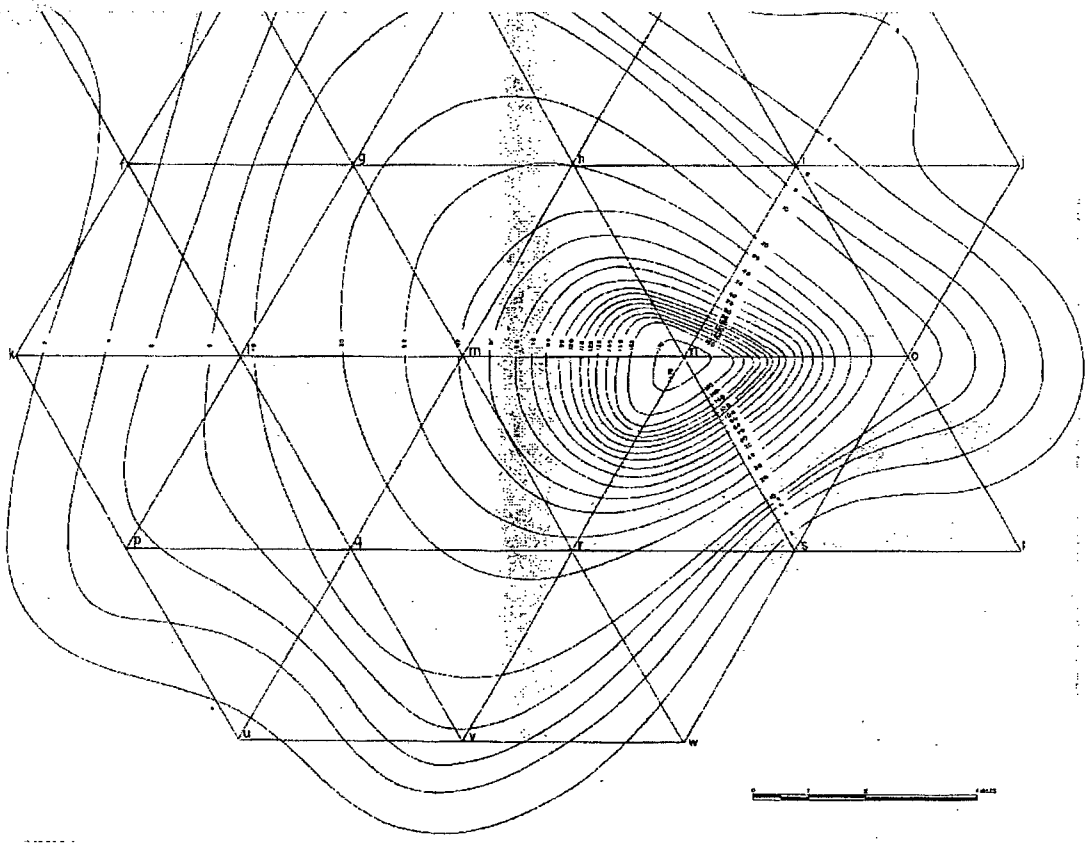
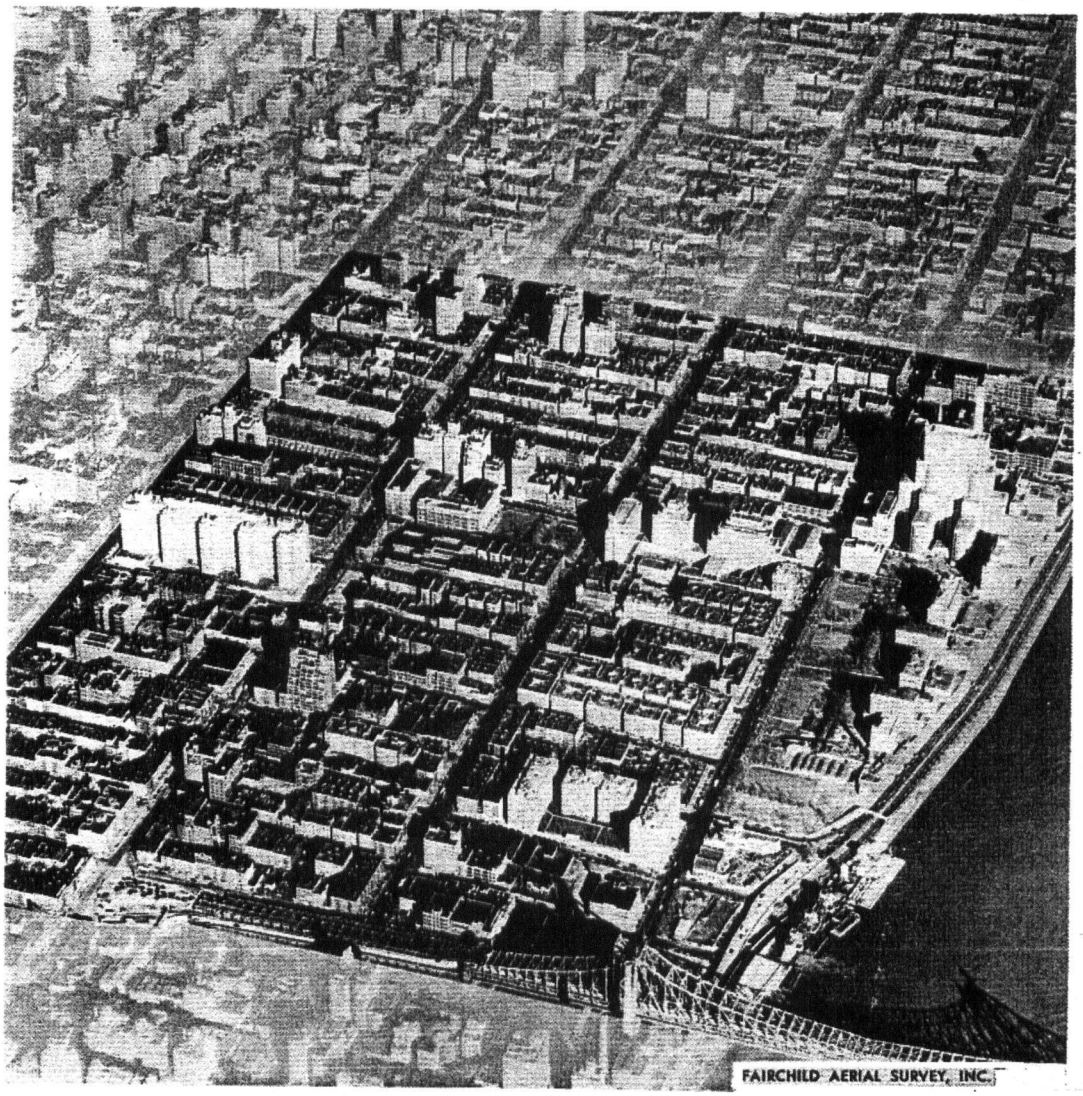


Figure 30 – "Daytime With Warning"
Federal Civil Defense Administration, *Civil Defense Urban Analysis* (1953), n. p.



Air view of the selected area in Manhattan; the East River and Queensborough Bridge at lower right.

FIGURE 1b

Figure 31 – Site of Disaster Simulation
Report of the Project East River, Appendix 5-A (1952), p. 5a

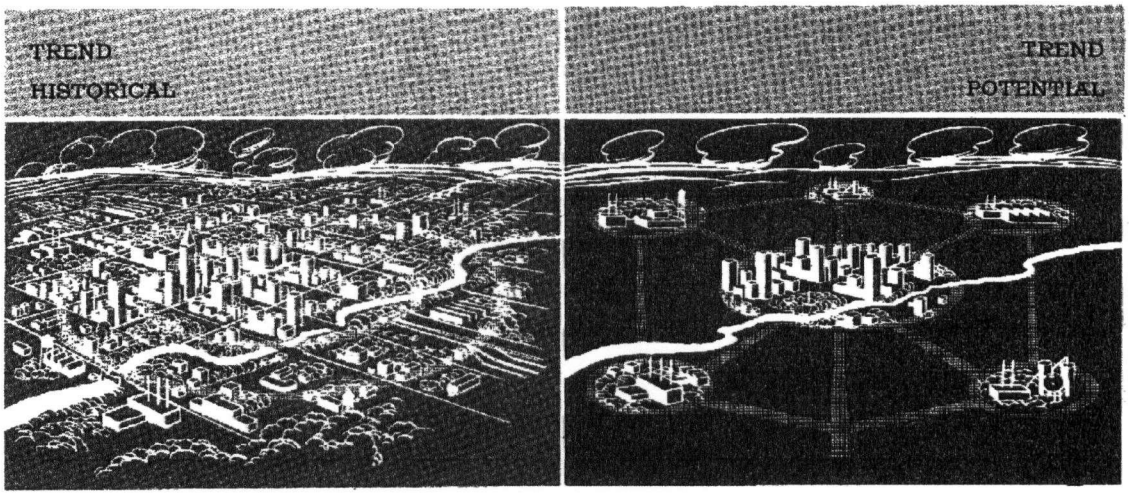


Figure 32 – Past versus Potential
National Security Resources Board,
National Security Factors in Industrial Location (1948), p. 10

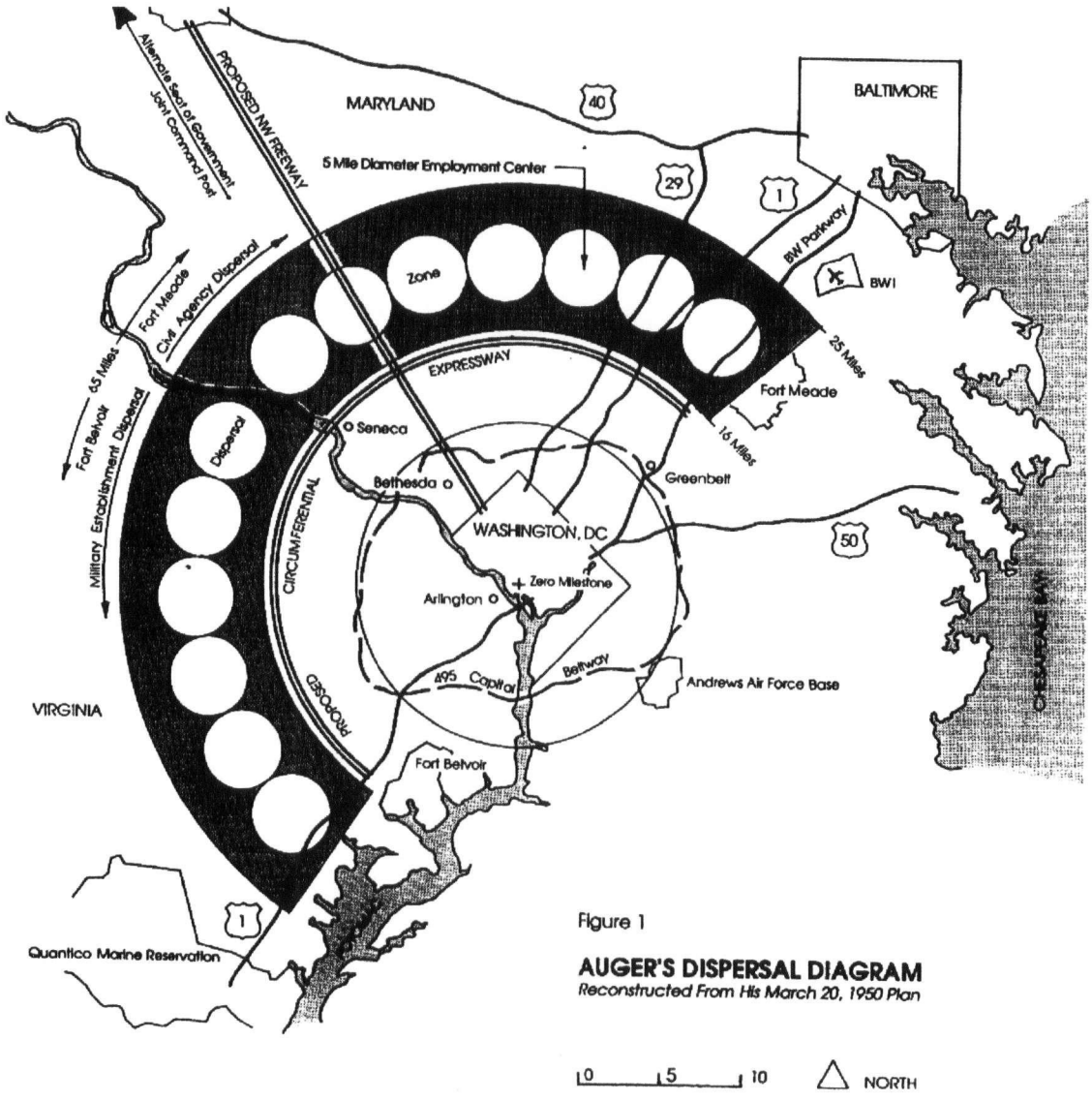


Figure 33 – "Auger's [sic] Dispersal Program"
Parsons, *Shaping the Regional City* (1989), Inset

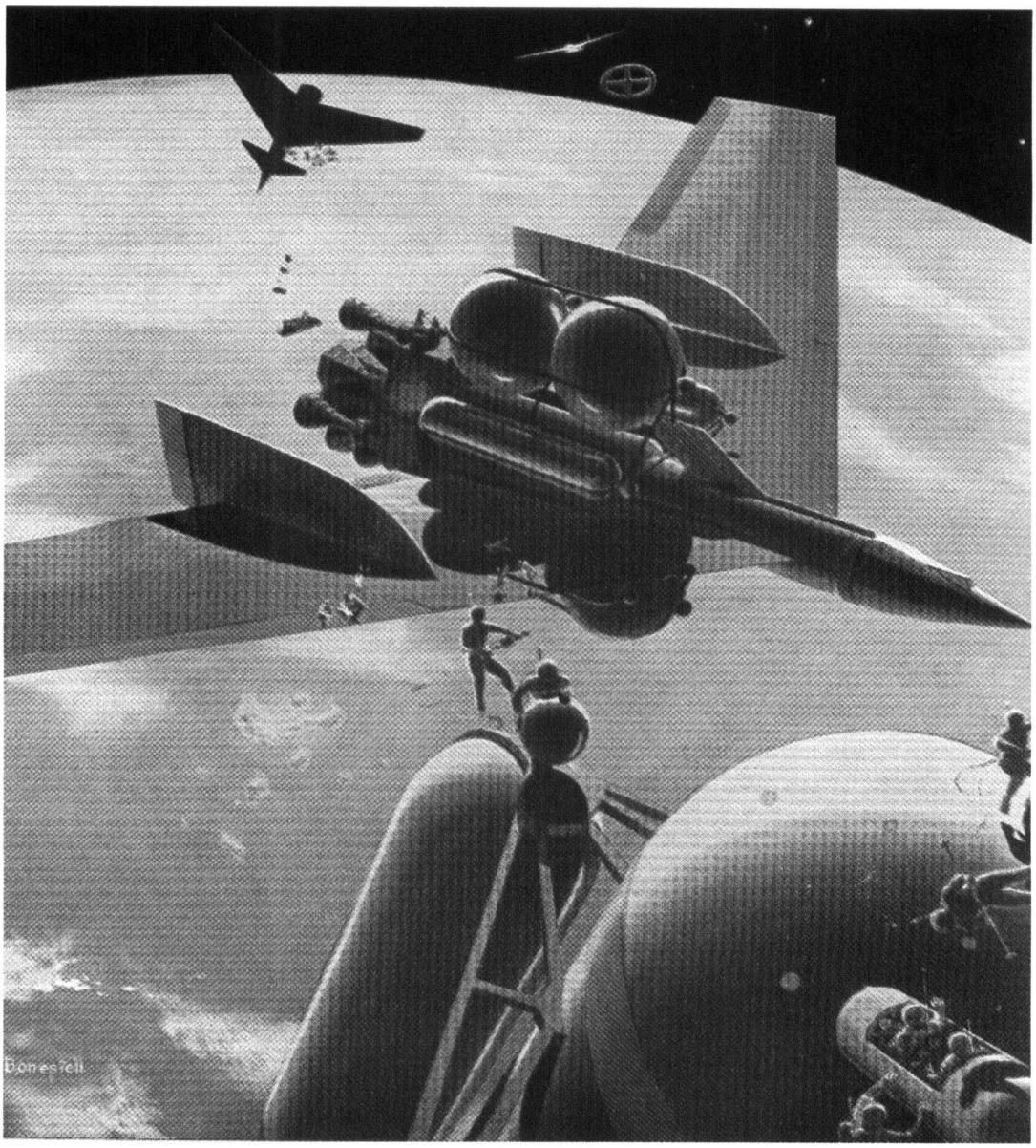


Figure 34 – "Assembling the Ships for the Mars Expedition" (Chesley Bonestell)
Ley and von Braun, *The Exploration of Mars* (1960), p. 96

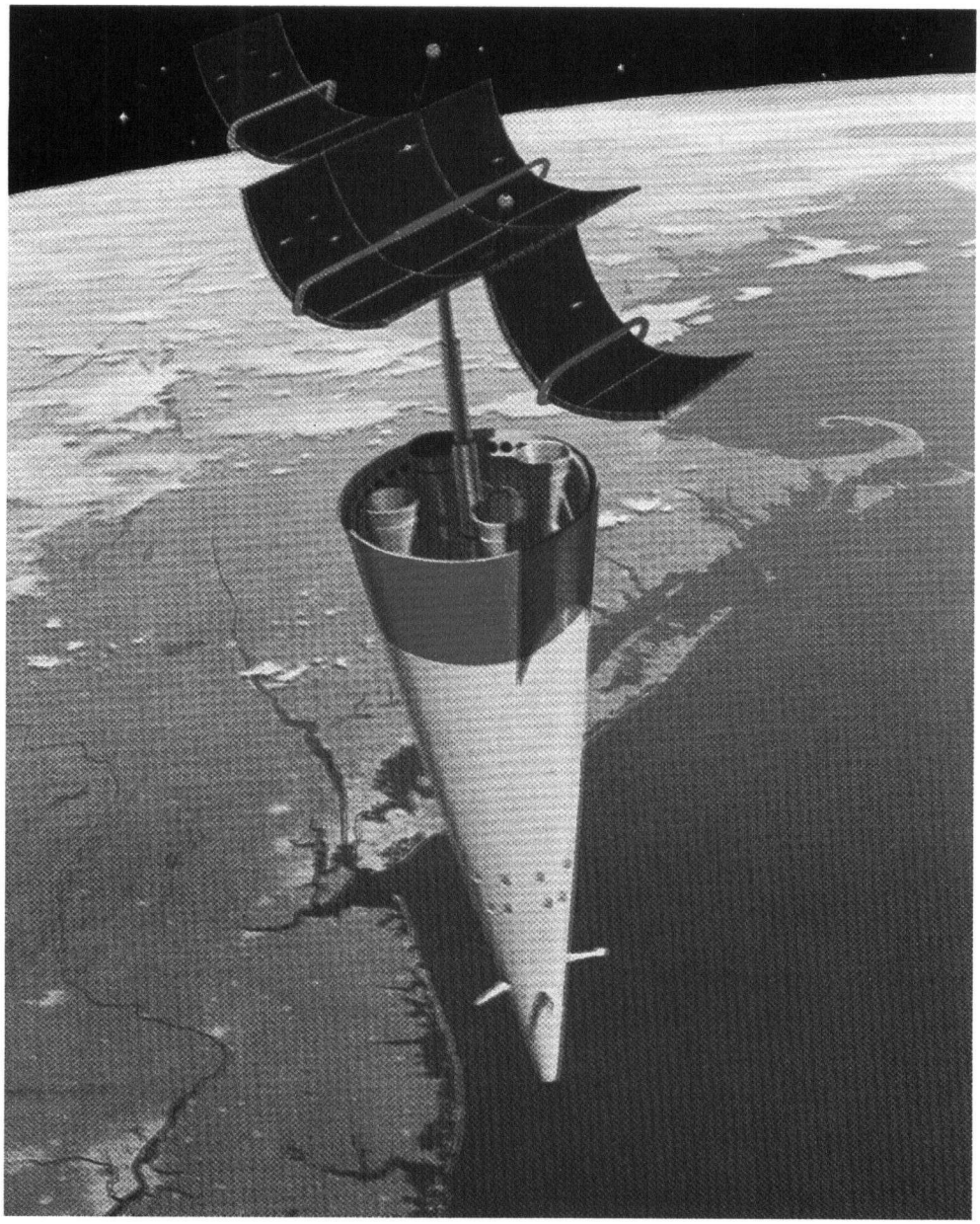


Figure 35 – "An Unmanned Instrument-Carrying Satellite in its Orbit" (C. Bonestell)
Ley and Von Braun, *The Exploration of Mars* (1960), p. 92.

Figure 36 – Feeding at 'Altitude', Wright Air Development Center (22 April 1958)
NARA Still Picture Division, RG 342, Series 342-B, Box 655, Folder 342-B-T-027-2

Archival Sources

AT&T	AT&T Archives, Warren, NJ
BASR	Bureau of Applied Social Research Papers, Columbia University Rare Book and Manuscript Library, New York, NY
CCNY	Carnegie Corporation of New York Archives, Columbia University Rare Book and Manuscript Library, New York, NY
LLAB	Lincoln Laboratory Archives, Lexington, MA
LOC	Library of Congress Manuscript Division, Washington, DC Lloyd V. Berkner Papers Curtis E. LeMay Papers Carl A. Spaatz Papers Hoyt S. Vandenberg Papers
LWGU	Leonard S. Wilson Collection, Georgetown University Special Collections
MIT	Institute Archives, Massachusetts Institute of Technology, Cambridge, MA AC 4: Records, Office of the President, 1930-1958 AC 132: Records of the Office of the Chancellor (Stratton), 1949-1957 MC 31: Jerrold Zacharias Papers MC 75: Philip Morse Papers MC 365: Albert Hill Papers MC 420: Jerome Wiesner Papers
MCS	M. C. Shelesnyak Papers, National Library of Medicine, Bethesda, MD
NAA	National Anthropological Archives, Suitland, MD Henry Bascom Collins Papers William Duncan Strong Papers
NAC	National Archives of Canada, Ottawa, ON RG 2: Privy Council Office fonds RG 22: Department of Indian Affairs and Northern Development fonds RG 24: Department of National Defence fonds

NARA	National Archives and Records Administration, College Park, MD RG 59: Records of the Department of State RG 226: Records of the Office of Strategic Services RG 263: Records of the Central Intelligence Agency RG 304: Records of the Office of Civil and Defense Mobilization RG 306: Records of the US Information Agency RG 342: Records of the US Air Force - Commands, Activities, and Organizations
NN	National Academy of Sciences-National Research Council Archives, Washington, DC
RF	Rockefeller Foundation Papers, Rockefeller Archive Center, Tarrytown, NY
RL	RAND Corporation Library, Santa Monica, CA
RRC	Records of the Russian Research Center, Harvard University Archives, Cambridge, MA
SIA	Smithsonian Institution Archives, Washington, DC RG 87: Records of the Ethnogeographic Board Henry B. Collins Oral History Frank A. Taylor Oral History
SSRC	Social Science Research Council Papers, Rockefeller Archive Center, Tarrytown, NY

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