Cold War Anthropology

Price, David H.

Published by Duke University Press

Price, David H.
Cold War Anthropology: The CIA, the Pentagon, and the Growth of Dual Use Anthropology.

For additional information about this book
https://muse.jhu.edu/book/68675
The analytic branch of the CIA is given to tweedy, pipe-smoking intellectuals who work much as if they were doing research back in the universities whence many of them came. It probably has more Ph.Ds than any other area of government and more than many colleges. Their expertise ranges from anthropology to zoology. Yet, for all that, they can be wrong.

STANFIELD TURNER | former director of Central Intelligence, 1985

PREFACE

This book considers some of the ways that military and intelligence agencies quietly shaped the development of anthropology in the United States during the first three decades of the Cold War. Whether hidden or open secrets, these interactions transformed anthropology’s development in ways that continue to influence the discipline today. This is an anthropological consideration of anthropology; studying up in ways I hope help the discipline reconsider its inevitable engagements with the world it studies (Nader 1972).

In many of the early Cold War interfaces connecting anthropology and military-intelligence agencies documented here, the anthropologists producing research of interest to governmental agencies pursued questions of genuine interest to themselves and their discipline. Sometimes gentle nudges of available funding opportunities helped anthropologists choose one particular element of a larger topic over another; in other instances anthropologists independently pursued their own intellectual interests, producing work that was only later of interest or of use to military or intelligence agencies. In some instances anthropologists recurrently produced work of no value to, or opposing policies of, these agencies. Anthropological research was sometimes directly commissioned to meet the needs of, or answer specific questions of, military and intelligence agencies, while other times sponsorship occurred without funded anthropologists’ knowledge.

Laura Nader argues that one of anthropology’s fundamental jobs is to provide context: to enlarge the scope of study beyond particular instances and encompass larger contexts of power, mapping power’s influence on the creation
and uses of social meanings. Understanding power involves studying the economic and social systems from which power relations arise. Given the military-industrial complex’s dominance in postwar America, anthropologists might well expect to find the explanatory systems of our culture to be embedded in and reflecting these larger elements of militarization in ways that do not appear obvious to participants. Cultures frequently integrate, generally without critical reflection, core features of their base economic systems into widely shared ideological features of a society. Most generally these are seen as naturally occurring features of a culture, often ethnocentrically assumed to be views shared by any society. Among pastoral peoples this may mean that religious systems integrate metaphors of gods as shepherds (who shall not want), pristine despotic hydraulic states worshipping their chief bureaucratic administrators as god-kings, or capitalists constructing versions of a Jesus whose Sermon on the Mount somehow supports the cruelties of laissez-faire capitalism. Such ideological integrations of a society’s economic foundations are common subjects of anthropological inquiry, though the disciplinary histories of the last half century have seldom consistently focused on political economy as a primary force shaping the theory and practice of anthropology.

Anthropologists, sociologists, and some disciplinary historians study the interplay between political economy and the production and consumption of anthropological knowledge. Since Karl Mannheim’s (1936) observations on the sociology of knowledge systems, there has been broad acceptance of such links. Thomas Patterson’s *Social History of Anthropology in the United States* (2003) connects political and economic impacts on the development of the discipline. Anthropologists like June Nash, Eric Wolf, Gerald Berreman, Kathleen Gough, or Sidney Mintz direct attention to the political and economic forces shaping field research or the selection of research topics (whether peasants or geopolitical regions) (Berreman 1981; Gough 1968; Mintz 1985; Nash 2007: 3; Jorgensen and Wolf 1970). Eric Ross’s *Malthus Factor* (1998b) brilliantly shows how the development of demographic theory from the age of Malthus to the Cold War was inherently linked to the political economy of the age. In different ways, William Roseberry’s essay “The Unbearable Lightness of Anthropology” (1996) and Marvin Harris’s *Theories of Culture in Postmodern Times* (1998) challenged anthropologists to connect postmodernism’s explicit neglect of the importance of political economy with broader disciplinary political disengagements. Critiques of colonialism’s impact on anthropology by Asad (1973), Gough (1968), and others dominated discourse in the 1970s and significantly shaped anthropology’s understanding of its role in political and economic-colonial formations.
Yet, while the Central Intelligence Agency (CIA), the Pentagon, and facets of American militarism marked political crises from Project Camelot to the Thai Affair, anthropologists’ scholarly attempts to put the agency back in the Central Intelligence Agency have been episodic and fleeting. Joseph Jorgensen and Eric Wolf’s (1970) essay, “Anthropology on the Warpath in Thailand,” provided a framework and sketched enough details to launch the serious academic pursuit of such questions, yet the academic pursuit of documenting such disciplinary interactions remained largely ignored.

I have gone to great lengths to base this narrative and analysis on documents that meet standards of academic research, striving to provide citations for each piece of this puzzle—which both limits and strengthens what can be said of these relationships; in several instances I have excluded discussion of apparent connections with intelligence agencies because of the limited availability of supporting documents. This book is not an exhaustive study of these relationships; it provides a framework for further work and a sample of these pervasive mutually beneficial interactions. I made extensive use of the Freedom of Information Act (FOIA) to file hundreds of requests with the CIA, the Federal Bureau of Investigation (FBI), the Department of Defense, and other agencies, requesting documents on anthropologists and organizations where anthropologists worked during the Cold War. I have also drawn heavily on governmental and private archival sources, as well as previously published materials. While FOIA allowed me to access tens of thousands of remarkable documents from the CIA and other agencies, the CIA continues to guard much of its history and usually complies with FOIA requests in the most limited way, resisting intrusions into its institutional history. Yet even with this resistance, it is possible to document specific incidents and infer general patterns from the sample of available documents.¹

While portions of my research for this book began during the early post–Cold War years, the emergence of the post-9/11 security state significantly and inevitably shaped my analysis of past and present interactions between anthropologists and military-intelligence organizations, just as my historical analysis of post-9/11 developments was influenced by my historical research on past intelligence agency abuses (see, e.g., Price 2004a). In struggling to add political context to our historical consideration of the development of Cold War anthropology, I hope to have sufficiently complicated the narrative by stressing the dual use nature of this history: showing that anthropologists often pursued questions of their own design, for their own reasons, while operating in specific historical contexts where the overarching military-industrial university complex
had its own interest in the knowledge generated from these inquiries. The dual use dynamics of these relationships are of central interest to this book.

For some readers, writing about the CIA raises questions of conspiracies, but I find no hidden forces at work here any larger than those directing capitalism itself. As social forces of significant breadth and power, and playing important roles in supporting America’s militarized economy, the Pentagon and the CIA can be difficult to write about in ways that do not make them out to be totalizing forces that explain everything, and thereby nothing, at the same time. While some may misinterpret my focus on the importance of these military and intelligence elements, exaggerating their significance to the exclusion of other social features, my focus on these militarized elements of midcentury American political economy is as central to this work as Richard Lee’s (1979) focus on !Kung San hunting and collecting, June Nash’s (1979b) focus on Bolivian mining labor relations, or Roy Rappaport’s (1984) focus on Tsembaga Maring horticulture and feasting cycles. Anthropological analysis of systems of knowledge production (even its own) needs to contextualize the worlds in which this knowledge exists. As Steve Fuller argues in his intellectual biography of Thomas Kuhn, “Part of the critical mission of the sociology of knowledge . . . is to get people to realize that their thought stands in some systemic relationship to taken-for-granted social conditions” (2000: 232). And while the Cold War’s national security state was not the only force acting on anthropology during this period, it is the subject of this book—and a force with significant power in midcentury America—and it thus receives a lot of attention here.

**Dual Use Anthropology**

The phrase “dual use” appearing in the book’s title is borrowed from the physical sciences, which have long worried about the symbiotic relationships between the “pure” and “applied” sciences, relationships in which academic theoretical developments are transformed into commercial products or military applications. Dual use science became a central feature of experimental natural sciences during the twentieth century. This transformation shaped branches of physics, chemistry, biology, and medicine, and scientists from these and other fields increasingly came to surrender concerns about the applied uses of the knowledge they produced as being part of the natural order of things if they were to be able to do their work. As physics moved from answering questions with mathematics, pen and paper, and simple apparatus, to requiring the manufacture of massive, expensive machinery built not by a dozen scientists but by hundreds or
thousands of scientists, to plumb secrets of the subatomic realm, it needed sponsors whose uses of such knowledge were fundamentally different from those of pure knowledge and discovery. With the increased weaponization of physics, such funds came to flow from militarized sources with such frequency that the silence surrounding such occurrences became a common feature of the discipline’s milieu.

The dynamics of these processes and the outcomes of this dual use nature of scientific advancements are well known, and the general understanding that “pure science” has both “nonpractical” and “applied” uses has widespread acceptance in American society. During the second half of the twentieth century, this dynamic became a thematic element of Americans’ shared beliefs in scientific progress. The tragedy of Robert Oppenheimer’s slow comprehension that he and his colleagues would be excluded from decision-making processes concerning how their weapons would be used became part of the American dual use narrative. Most scientists understand that the knowledge they produce enters a universe in which they likely have no control over how this knowledge is used; some of this awareness comes from the legal conditions governing the labs where they work, conditions in which employers often own the intellectual rights to the fruits of their labors, but these dynamics go far beyond such legal concerns.

For decades the phrase “dual use research” has described the militarized applications of basic science research, at times describing scientific breakthroughs that have both commercial and military applications, such as developments in global positioning satellites that led to both precision weapons targeting systems and commercial dashboard navigation systems for family cars. Debates over dual use science often focus on biomedical breakthroughs that simultaneously hold the potential both for cures and for the development of devastating weapons. Such potential applications often mix “pure science” research with commercial or military dual uses in ways that confound or mix understandings of “defensive” and “offensive” uses of biomedical knowledge (Miller and Selgelid 2008). Approaches to such biological research are far from uniform. Some groups of scientists, like the Cambridge Working Group, raise public concerns posed by research into viruses and other transmittable diseases; others, like members of Scientists for Science, advocate for the right to continue such research (Greenfieldboyce 2014). But even with these disputes, this awareness of the dual use potential of such work helps focus and clarify the fundamental issues of these debates.

Dual use research programs significantly altered the trajectories of twentieth-century physics, and the payouts for commercial interests and the
weapons-industrial complex have been so sizable that the U.S. government supports massive funding programs for supercolliders and other large expenditures that appear to have no direct applications to weapons work. But if past performance is any predictor of future uses, either applications or new frontiers of adaptable useful knowledge will follow. David Kaiser (2002) argues that many of the expensive large physics projects with no apparent military applications, such as supercolliders, functionally create a surplus of physicists who can assist military projects as needed.

The dynamics governing the direction of the knowledge flow of dual use research appear to often favor transfers of knowledge from pure to applied research projects, but a close examination of interplays between theory and application finds any deterministic statements far too simplistic to account for the feedback between theory and application. Notions of “applied” and “pure” science are constructions that, although useful, have limitations. In 1976, Stewart Brand asked Gregory Bateson about the roots of his cybernetic research. Bateson explained that his initial interest in developing cybernetic theories of cultural systems came not out of abstract, nonapplied theoretical musings but from applied military research. Bateson's interest in cybernetic feedback in cultural systems was, ironically, itself propagated by an instance of reverse feedback insofar as his abstract theoretical interest came from concrete problems arising from designing self-guiding missile systems. In a move reversing what might appear to be general trends of dual use information flow, Bateson took applied military knowledge and transferred it into the basis of a theoretical abstraction analyzing biological and cultural systems.

Distinctions between “applied” and “pure” research shift over time. Sometimes the abstractions of theoretical or pure research follow from applied problems; other times theoretical developments lead to applied innovations in ways that diminish the utility of these distinctions. The physical sciences long ago acknowledged the dual use nature of their discoveries: assuming that discoveries or inventions made with one intention necessarily were open to other, at times often militarized, uses. Some scientific developments like radar, the Internet, GPS navigation systems, walkie-talkies, jet propulsion engines, night vision, and digital photography were initially introduced as military applications and later took on dual civilian uses; in other cases, what were initially either commercial or “pure research” scientific discoveries took on military applications, such as the discovery that altimeters could become detonation triggers, or the chain of theoretical physics discoveries that led to the design and use of atomic weapons.
Field research projects in other disciplines have also brought dual uses linked to the Cold War’s national security state. Michael Lewis’s analysis of the Pacific Ocean Biological Survey (POBS), a U.S.-financed ornithological study in India in the 1960s involving ornithologist, Office of Strategic Services (OSS) alumnus, and Smithsonian director S. Dillon Ripley, shows a project that provided scientists and American intelligence agencies with the data they separately sought: the ornithologists gained important data on migratory bird patterns, and the Defense Department gained vital knowledge it sought for a biological weapons program. Lewis found the survey was not simply a “cover” operation but instead “exactly what it was purported to be—an attempt to determine what diseases birds of the central Pacific naturally carried, and to determine bird migration patterns in that region. And it is also clear that POBS was connected to the US biological warfare programme” (Lewis 2002: 2326). The project was directed from the army’s Biological Warfare Center at Fort Detrick, with plans (apparently never enacted) to test biological agents to monitor disbursement patterns. As Lewis observed, “Studying the transmission of biological pathogens by birds for defensive purposes is only a hair’s-breadth from turning that information to an offensive purpose” (2326).

American anthropology has been slow to acknowledge the extent to which it is embedded in dual use processes, preferring to imagine itself as somehow independent not only from the militarized political economy in which it is embedded but also from the traceable uses to which American academic geographic knowledge has been put. The Second World War and the Cold War years that followed were an unacknowledged watershed for dual use anthropological developments. During the war, cultural anthropologists worked as spies, educators, cultural liaison officers, language and culture instructors, and strategic analysts. Not only did anthropological linguists prove their worth in learning and teaching the languages needed for waging the war, but their research into language training made fundamental breakthroughs in language teaching techniques; one dual use of these developments was that pocket foreign language phrase books, based on model sentences with inserted vocabulary words, became the basis of Berlitz’s commercial foreign language pocketbook series (D. H. Price 2008a: 76–77). Physical anthropologists contributed forensic skills to body identifications and were in demand to assist in anthropometric designs of uniforms and new war-fighting machines. Diverse technological innovations (from developments of isotope-based absolute dating techniques to adaptations of radar and new forms of aerial stenographic photography) derived from advancements pushed forward during the Second World War.
While it is seldom acknowledged, many anthropological projects during the Cold War occurred within political contexts in which the American government had counterinsurgent (or, occasionally, insurgent) desires for studied populations. Counterinsurgency encompasses various practices designed to subdue uprisings or other challenges to governments. Some forms of counterinsurgency rely on what political scientist Joseph Nye (2005) termed “hard power”; others draw on soft power. Hard power uses military or paramilitary force and other forms of violence to attack insurgents; soft power uses co-option and corrosion to win favor among insurgents. Whether anthropologists provided cultural information to military or intelligence agencies or assisted in the implementation of international aid programs to stabilize foreign regimes, this book finds that they played many roles linked to counterinsurgency operations—at times undertaking these roles while pursuing their own research projects.

In part, cultural anthropology’s self-conception as a discipline generally removed from the processes of dual use science arose from how so many of its practitioners appeared to remain in control of their disciplinary means of production. While grants or other funds that allow anthropologists to spend months or years in the field make life easier, self-financed ethnography or the production of social theory still occurred with relatively meager funds. Most anthropologists do not need to work in expensive teams and do not rely on cyclotrons or particle accelerators; at its most basic, ethnography needs time, people, libraries, theory, reflection, and colleagues.

Although archaeologists routinely work on large, multiyear, coordinated, expensive research projects, relatively few cultural anthropological research projects during the postwar period had high-budget needs similar to those spawning the expansion of dual use trends in chemistry or physics. Few cultural anthropological research designs required significant material support beyond the basic essentials of travel funds, pencils, paper, pith helmet, mosquito nettings, and portable typewriters. Early Cold War anthropology projects rarely required expensive equipment or brought together numerous scholars working on a single project.

Government-financed language programs, like the Army Special Training Language Program or Title VI–funded basic language acquisition, gave scholars the academic skills needed for field research, but these programs lacked mechanisms of coercive focus that could automatically capture funded scholars for some sort of later state purpose. Some postwar projects hired unprecedented large teams of anthropologists to undertake forms of coordinated fieldwork projects. Some of these were governmental programs like the Coordinated Investi-
gation of Micronesian Anthropology (cima, funded by the U.S. Navy); others were largely funded by private foundations with ties to U.S. political policy like the Ford Foundation’s Modjokuto Project—run out of mit’s cia-linked Center for International Studies.

Because so much of anthropology’s postcolonial history all but ignores interactions between anthropologists and military and intelligence agencies, I worry that my focus on these direct and indirect relationships risks creating its own distortions by creating the impression that an overwhelming majority of anthropological research directly fed military and intelligence apparatus. This was not the case. I assume that the majority of anthropological research had no direct military or intelligence applications, though the indirect ways these programs informed military and civilian agencies about regional knowledge were often significant, and the desires of these agencies routinely shaped the funding of anthropologists’ research.

These dual use relationships also nurtured dual personalities among some anthropologists who attempted to balance disciplinary and state interests. The postwar years leave records of anthropologists seeking funding opportunities directly and indirectly linked to Cold War projects through patterns reminiscent of Talal Asad’s depiction of Bronislaw Malinowski as a “reluctant imperialist” (1973: 41–69). Although Malinowski at least partially understood the potential negative impacts of such funding relationships, beyond the rare dissent of soon-to-be-disciplinary outsider Jerome Rauch (1955), there was little public consideration of such impacts until the mid-1960s. These silences birthed schisms within anthropologists, like Julian Steward, who developed stripped-down Marxian materialist ecological models while campaigning for Cold War area study funds, even while training a new generation of scholars whose work more directly drew on Marx. There were schisms within archaeologists and cultural anthropologists exploring the rise of pristine state formations using theories of Karl Wittfogel, a Red-baiting anticommunist, whose own dual personality openly quoted and used Marx’s writings with impunity while he informed on Marxist colleges and students to the FBI and the tribunals of McCarthyism (D. H. Price 2008c). Other dual personality traits developed as anthropologists like Clyde Kluckhohn and Clifford Geertz worked on projects with direct or indirect connections to the cia or the Pentagon, even as they omitted such links from the textual descriptions they thinly constructed.

Even during the early days of the Cold War, some anthropologists were critical of encroachments of American Cold War politics into anthropological practice. Elizabeth Bacon, John Embree, and Jerome Rauch voiced insightful critiques.
of the sort familiar to contemporary anthropologists. Their work and other examples of early critical analysis can inform contemporary anthropologists seeking alternatives to military-linked anthropological prospects in a world increasingly seeking to draw on anthropological analysis for post-9/11 military, intelligence, and security projects.

One lesson I learned by studying the work of Cold War anthropologists is that individual anthropologists’ beliefs that they were engaged in apolitical or politically neutral work had little bearing on the political context or nature of their work. Instead, these scientists’ claims of neutrality often meant they had unexamined alignments with the predominating political forces, which went unnoticed because they occurred without friction. But as Marvin Harris argued in *The Rise of Anthropological Theory* almost half a century ago, “Ethical and political neutrality in the realm of social-science research is a limiting condition which cannot be approached by a posture of indifference. Neither the researcher who preaches the partisanship of science, nor [he or she] who professes complete political apathy, is to be trusted. Naturally, we demand that the scientific ethic—fidelity to data—must be the foundation of all research. But we must also demand that scientific research be oriented by explicit hypotheses, whose political and moral consequences in both an active and passive sense are understood and rendered explicit by the researcher” (1968: 222). Extending this observation to this project, I find that my own political and ethical orientations align with my academic critiques of the CIA and the Pentagon as organizations threatening rather than protecting democratic movements at home and abroad, though during the two decades of this research, my political and ethical views themselves have been transformed by the act of historical research. But, as Harris argues, regardless of declared or undeclared ethical or political positions, it is the fidelity to the data by which research is judged, as should the moral and political consequences (both active and passive) derived from the seeds we sow.

*Situating This Book*

This is the final book in a trilogy chronicling interactions between American anthropologists and military and intelligence agencies. The first volume (chronologically, though not published in this order), *Anthropological Intelligence* (2008a), detailed how American anthropologists contributed their disciplinary knowledge to meet the military and intelligence needs of the Second World War. The second volume, *Threatening Anthropology* (2004b), explored how loyalty hearings and the FBI’s surveillance of American anthropologists during
the McCarthy period limited the discipline's theory and practice—deadening what might have been critical theoretical developments and discouraging applied forms of activist anthropology tied to issues of social justice and equality.

This final volume connects elements of these earlier books; whereas *Threatening Anthropology* told the story of victims of the national security state’s persecution of anthropologists who questioned the justice or rationality of America’s Cold War era political economy, this volume analyzes how Cold War anthropologists’ work at times aligned with the interests of rich and powerful agencies, such as the CIA or the Pentagon. This volume connects with the exploration in *Anthropological Intelligence* of how the needs of World War II transformed anthropology in ways that would later take on new meanings during the Cold War. Few Americans who came to see anthropological contributions to military or intelligence agencies while fighting fascism and totalitarianism during the Second World War critically stopped to reconsider the impacts of extending such relationships into the Cold War.

This book traces a historical arc connecting transformations in anthropologists’ support for military and intelligence activities during the Second World War to the widespread condemnation of anthropological contributions to American military and intelligence campaigns in the American wars in Southeast Asia. This spans a complex historical period marked by cultural revolutions, startling revelations of FBI and CIA illegal activities, secret wars, cynical neocolonial governmental programs, and increasing awareness of anthropology’s historical connections to colonialism. In less than three decades the discipline shifted from a near-total alignment supporting global militarization efforts, to widespread radical or liberal opposition to American foreign policy and resistance to anthropological collaborations with military and intelligence agencies. This was a profound realignment of intellectual orientations to the state.

*Cold War Anthropology* focuses on how shifts in the Cold War's political economy provided anthropology with rich opportunities to undertake well-funded research of interest to anthropologists, while providing this new national security state with general and specific knowledge. Once-secret documents now show funding programs and strategies that were used to shape the work of scholars conducting international research. Many Americans continued to interpret early Cold War political developments with views linked closely to the world of the previous war. Occupations and other postwar programs found anthropologists continuing to use many of the skills developed during the last war, now in a world pursuing new political goals. The postwar reorganization of the American Anthropological Association (AAA) anticipated new funding opportunities.
Area study centers and other postwar regroupings of social scientists studying questions of interest to the Department of State, the Department of Defense, and intelligence organizations broadly impacted postwar anthropologists.

Anthropologists and military or intelligence agencies interacted through four distinct types of relationships: as witting-direct, witting-indirect, unwitting-direct, and unwitting-indirect participants (D. H. Price 2002: 17). After the war, many anthropologists transformed elements of their wartime service into governmental research, policy, development, or intelligence work. Some developed careers at the Department of State or the CIA. Some of the work involved seamless applications of wartime work, adapted to shifts in the postwar world.

Investigative reporting and congressional hearings identified several CIA-linked social science research projects financed by CIA funding fronts. Press reports from 1967 revealed the Asia Foundation as a CIA funding front, and the Asia Foundation’s relationship with the AAA is examined. The Human Ecology Fund is also examined as a CIA front that financed and harvested anthropological research of interest to the CIA.

One way that anthropologists’ fieldwork intersected with intelligence agencies was through their writings being accessed without their knowledge; in other instances, cultural anthropologists and archaeologists used fieldwork as a cover for espionage. I examine one instance in which a CIA agent received anthropological funding and was sent to the field under the guise of conducting anthropological research.

In several cases, anthropologists or research groups used military-linked funds for basic research, producing knowledge that had national security uses. During the 1950s and 1960s, the Human Relations Area Files (HRAF) subcontracted army area handbooks and used the funds from this work to finance basic theoretical research of interest to HRAF anthropologists. American University’s Special Operations Research Office (SORO) and Counterinsurgency Information and Analysis Center (CINFAC) wrote counterinsurgency reports drawing on anthropological writings. One SORO program, Project Camelot, significantly impacted the AAA, and records from Ralph Beals’s post-Camelot inquiries into military and intelligence interactions with anthropologists provide significant new information detailing how the CIA sought assistance and information from anthropologists during the early Cold War.

After leaked documents revealed that American anthropologists were undertaking counterinsurgency work in Thailand, several anthropologists became embroiled in public clashes within the AAA over the political and ethical propriety of such work. Anthropological research for the RAND Corporation
on Vietnam and anthropologists’ contributions to USAID, ARPA, and AACT counterinsurgency projects in Thailand show increased uses of anthropological knowledge for counterinsurgency. The fallout from the Thai Affair pressed the AAA to adopt its first ethics code, prohibiting secret research, orienting anthropological research toward the interests of research subjects, and requiring new levels of disclosure. The AAA’s focus on ethical issues raised by anthropological contributions to military and intelligence projects identified some of the disciplinary problems with military uses of anthropology, yet many of the core questions about the dual use nature of anthropological research remain unanswered within the discipline today.