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Resisting Power, Retooling Justice: Promises of Feminist Postcolonial Technosciences

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Abstract

This special issue explores intersections of feminism, postcolonialism, and technoscience. The papers emerged out of a 2014 research seminar on Feminist Postcolonial Science and Technology Studies (STS) at the Institute for Research on Women and Gender, University of Michigan. Through innovative engagement with rich empirical cases and theoretical trends in postcolonial theory, feminist theory, and STS, the papers trace local and global circulations of technoscience. They illuminate ways in which science and technology are imbricated in circuits of state power and global inequality and in social movements resisting the state and neocolonial orders. The collection foregrounds the importance of feminist postcolonial STS to our understandings of technoscience, especially how power matters for epistemology and justice.

Keywords

postcolonial, feminism, epistemology, justice

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Where there is power, there is resistance.

Foucault (1978)

The master's tools will never dismantle the master's house.

Lorde (1984)

As science and technology have increasingly moved center stage in the circuits of state and global power, we have witnessed technoscience's vital role not only in those circuits but also in the social movements that resist them. In this issue, we explore how technoscientific knowledge travels and especially how it emerges as a central actor and tool for state and global projects. As Michel Foucault points out, power inevitably produces resistance. Progressive social actors and movements have also (re)tooled themselves with the technics of modern technoscientific power. Yet as Audre Lorde suggests, there are limits to the progressive ends to which these tools can be put. In this special issue, we examine the travels of power and resistance through the multidirectional circulations of technoscience. Bringing together theoretical engagements and several case studies, we present a complex, multidirectional, and varied pattern of circulations.

The papers in this collection emerge from a 2014 research seminar at the University of Michigan Institute for Research on Women and Gender on "feminist postcolonial science and technology studies (STS)." It draws together interdisciplinary scholars trained in women's studies, philosophy, legal studies, sociology, and anthropology to consider questions of theoretical and empirical import in the field of STS.

STS is a mature field with established genealogies and canonical texts. Over the last two decades, scholars have sought to extend the analyses, foci, and borders of STS to explore technoscience's deep imbrications in almost all facets of society and culture. Interdisciplinary scholars in women's studies, colonial and postcolonial studies, and critical race studies have established the centrality of gender, race, sexuality, nation, and other structures of inequality as profound influences on all aspects of the society. This burgeoning body of work has given rise to the vibrant fields of feminist STS and postcolonial STS, which examine the myriad ways in which these structures of inequality shape

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and are shaped by science and scientific inquiry. This special issue delves into exciting work on the multiple intersections of feminism, postcolonialism, and technoscience, examining how each has been co-constructed and coproduced with and through the others. We believe this work is important to the interdisciplines of STS, women's studies, and postcolonial studies as well as to natural and social science research, public policy, and social activism.

Taking on what often appear to be the different subfields and literatures of globalization, colonialism, and anticolonialism, the authors in this special issue remind us that we cannot understand the histories of globalization without taking into consideration the histories of colonialism and its aftermath. These circuits are multidirectional, historically varied, and heterogeneous. The authors join previous critics (Harding 2009; Raina 1999; Prasad 2014) in challenging unidirectional "diffusion" models of science and modernity, where science, rationality, progress, and enlightenment always rest in Europe or the West, to subsequently diffuse to non-Western nations (Chambers and Gillespie 2000). Instead, the essays suggest a much more mobile, fluid, and dynamic process. The richly textured narratives of science and technology in the different case studies in this special issue challenge any unitary notion of a uniquely "Western" or "modern" science. Rather, they show us that scientific travels have many local instantiations in different parts of the globe and should be understood as a set of diversely constituted practices whose movements are too complicated to be captured in simplistic center/periphery frames (Arnold 1993; Harding 2009; Goonatilake 1999; Prasad 2014). Rejecting the mythology of an exclusive Western origin story for science, our authors draw on the rich and multiple genealogies of science to reveal the centrality and importance of non-Western epistemologies, ontologies, and theories. The essays in this special issue add to the ongoing scholarly conversation in *Science, Technology, & Human Values* by foregrounding how intersectional modes of power matter for knowledge-making and justice.

Intersections: Feminism, Postcolonialism, and Technoscience

Several special issues of journals, scholarly reviews, and anthologies have sought to explore the intersections of feminism, postcolonialism, and technoscience. While these intersections have been examined in their dyadic forms, there has been limited exploration of how the three mutually cohere

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and shape one another (for notable exceptions, see Foster 2011; Lee 2013; TallBear 2014; Subramaniam et al. forthcoming). This special issue presents a collection of papers that attempt to do just that.

Consider the first pair of analytic frames: feminism and technoscience. These frames have been brought together productively in the field of feminist STS, which insists that categories of sex, gender, and sexuality are best understood not just as mutually influential categories but rather as ones coconstructed and coproduced. For example, scholars argue that sex, gender, race, sexuality, and nation emerged as scientific categories (i.e., as particular and unique biological ontologies) alongside colonial expansions of various kinds (Bleier 1984; Fausto-Sterling 1985, 2012; Hubbard 1990; Martin 1992; Stoler 1995; Somerville 1998; Schiebinger 2004a, 2004b; Hammonds and Herzig 2009; Fisher 2011). Feminism and STS have had intertwined histories, both emerging from and being shaped by social movements (Campbell 2009; Keller 1985; Haraway 1985; Harding 1986). Several anthologies have considered the vibrant and engaged field of feminist STS (Keller and Longino 1996; Bartsch and Lederman 2000; Mayberry, Subramaniam, and Weasel 2001; Wyer et al. 2013). Recent feminist theory that elaborates the colonial—especially feminist postcolonial theory—merits feminist STS's reengagement from a postcolonial frame.

One of the important contributions of feminist STS's historical analyses has been in documenting the shifting and evolving location of biological difference in body parts. Biological difference has at different times been located in the reproductive organs, brain, skeleton, hormones, blood, cells, and genes and more recently it has moved to "the molecular." Feminist analyses have kept pace, in turn increasingly focusing on materiality at the molecular scale (Fujimura 2000; Reardon 2005; Fisher 2011). As this work has developed and extended to posthuman frames, gender itself may or may not be foregrounded, and its feminist aspect is often legible mainly through its engagement with a genealogy of feminist scholarship (see, e.g., Roosth and Schrader 2012). Feminist postcolonial STS can also attend to the molecules, but it can't stay there (Pollock 2015; Smith 2013; Willey 2016). Feminist postcolonial STS reminds us that biological engagements with the body are deeply biopolitical projects. While exciting philosophical innovations engage with scientific understandings of bodies at molecular levels, we need to engage persistently with difference and matter across different scales. The molecular implications of difference must be understood in the context of the lived realities of individuals, communities, and nations of actually existing women and other people, including indigenous people and other colonized people worldwide.

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In the second configuration of the dyad, scholars in postcolonial STS explore the intersections of postcolonialism and technoscience (Anderson 2002; Anderson and Adams 2008; McNeil 2005; Seth 2009), arguing that to understand the dominance of science and technology, we have to trace its colonial circuits of influence. Technosciences were an intimate and inextricable part of the colonial machinery. Indeed, postcolonial STS scholars contend that the sciences are best understood as ''sciences of empire'' (Schiebinger 2004a) and that modern science should be understood as ''science in a colonial context'' (Seth 2009, 374). At the same time, postcolonial STS scholars have illuminated ''contradictory tendencies'' in technoscience, in which it becomes both a route to ''national scientific and commercial autonomy *and* dependence on global knowledge networks and foreign capital'' (Benjamin 2009, 341).

Postcolonial STS as a focal point of inquiry has become increasingly prominent in a period of increased institutionalization of STS beyond the United States, Europe, and Australia as exemplified by the 2010 and 2014 Annual Meetings of the Society for Social Studies of Science in Tokyo and Buenos Aires, respectively. *The Handbook of Science and Technology Studies* is an important field-defining edited collection overseen by the Society for Social Studies of Science, and its third volume (Hackett et al. 2008) and fourth volume (Felt et al. forthcoming) both include entries on science and postcolonialism (Anderson and Adams 2008; Subramaniam et al. forthcoming). Several edited volumes have been dedicated to postcolonial STS globally and regionally (Harding 2011; Medina, Costa Marques, and Holmes 2014) and STS journals have been established that are rooted in and focused on East Asia (*East Asian Science, Technology, and Society: An International Journal*, which began publication in 2007) and Latin America (*Revista Iberoamericana de Ciensia, Tecnologia y Sociedad*, which began publication in 2003). The dyad of science and postcolonialism has inspired several special issues of journals (MacLeod 2000; Anderson 2002; McNeil 2005; Schiebinger and Swan 2005; Abraham 2006; Seth 2009; Phalkey 2013). Despite these exciting beginnings, there is much left to be done in the elaboration of postcolonial STS, especially in exploring its more feminist and intersectional forms.

The third dyad, feminist postcolonial studies, is a robust body of work that explores the gendered nature of colonialism and postcolonialism, albeit with often little attention to science or technology (Mohanty 1986, 1996; Mohanty, Russo, and Torres 1991; Anzaldúa 1987; Spivak 1988, 1990, 2009; McClintock 1992; Grewal and Kaplan 1994; Shohat 2001; Lewis and Mills 2003; Mohanram 1999; Lugones 2007; Puar 2007). Spivak

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(1988) canonically observes that colonialism has long drawn on a justificatory frame of "white men are saving brown women from brown men," and this problem is as urgent as ever in the era of the global war on terror prominently justified by "saving" Muslim women and, increasingly, lesbians and gay men (Abu-Lughod 2002; Charania 2015; Puar 2007). Feminist analyses of postcolonialism have also chronicled the gendered and race(d) ideologies of the civilizational logics of colonialism, the centrality of gender to conceptions of the "nation" in colonial and postcolonial states, and how patriarchal and gendered colonial histories continue to haunt the postcolony (Sinha 2006; Ramaswamy 2010). Feminist postcolonial scholarship illuminates ways in which accounts of colonialism and militarism that ignore gender and feminism are inadequate. Yet these analyses can be enriched by attention to technoscience, especially in how both postcolonial STS and feminist STS document the centrality of science and technology to the colonizing mission of imperial powers. Feminist postcolonial STS can foreground the role of science and technology in both colonialism and militarism and in resistance.

Feminist Postcolonial STS: Local and Global Circulations

Feminist postcolonial STS can make a timely intervention into current trends in feminist scholarship. Whereas new feminist materialisms often highlight their discontinuity with feminist thinkers of the second half of the twentieth century and today (Ahmed 2008), feminist postcolonial STS centrally attends to ideologies of power and tends to highlight, as its context, earlier materialist feminists who emphasize the political economy of colonial expansion as well as other social justice movements. There have certainly been long-standing problems embedded in Euro-American-rooted feminism, to which postcolonial feminisms have been an important challenge (Mohanty 1986), but feminist solidarity is both possible and necessary (Mohanty 2002).

Attending to technoscience in feminist postcolonial analysis can help illuminate the ongoing materiality of global inequalities. One of the critical contributions of postcolonial studies is the erasure of the "post" in postcolonial studies (Hall 1996). Indeed, postcolonial studies have made visible the myriad ways in which colonial ideologies and colonial logics and circuits continue to shape postcolonial contexts. More than a decade into the ascendance of the exploration of "postcolonial technoscience," the postcolonial is now a site rich with temporal and spatial heterogeneity and

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context (see Anderson 2002; McNeil 2005). Postcolonial STS demonstrates how colonial ontologies have been "rephrased" within the technoscientific frameworks of globalization (Anderson and Adams 2008). Our analyses take into account the legacies and living present of colonialism as well as the radical possibilities and excruciating shortcomings of ongoing movements for liberation.

Feminist postcolonial STS also emerges from recent trends in STS theory, especially by those engaging justice as a matter of concern (Mamo and Fishman 2013). The authors in this special issue show how ethical and epistemological concerns are inextricable from political struggles over citizenship and inclusion in wide-ranging yet highly specific postcolonial contexts. This is the continuation of a long-standing commitment in feminist STS to grapple with "situated knowledges" (Haraway 1988), taking on particularly urgent and relevant contemporary sites of practice. In a way that resonates with other recent postcolonial STS interventions (Rajão, Duque, and Dé 2014, 770), these articles do not merely engage particular postcolonial sites to elaborate implicitly Northern STS frames in new empirical contexts. Instead, they strive to intervene theoretically to show that postcolonial and feminist critiques are urgent for STS and feminist theory as a whole.

This special issue foregrounds the multiple and varied travels of technoscience, helping us better understand the multiple "contact zones" of technoscience and empire across nations, cultures, laboratories, and societies (Pratt 1992; Anderson 2009). It challenges us to examine extant assumptions about what we mean by postcolonialism, colonialism, feminism, and technoscience. Drawing on theoretical, philosophical, and empirical knowledge, the collection of essays in this volume expands our understandings and definitions of all these terms. In this volume, we ask: what is the value for STS of considering the feminist and the postcolonial together?

All the papers attend to the travels of a global technoscience, even while demonstrating their local specificities. The essays together thus demonstrate the circulations of a "global" science, even while insisting that all practices ultimately act at the local level while they do global work. Refusing the binaries of the local and the global, and insisting on understanding the circulations of science, is one of the strengths of this special issue. Together the essays are a reminder that power and knowledge are always inextricably interconnected. The various case studies presented here suggest that indeed the technosciences have often been deployed toward progressive, liberatory, and feminist goals, but that the complex circuits of power sometimes create surprising and uneven results and consequences.

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Feminism, postcolonialism, and technoscience each have unequal access to power in global and local contexts. Understanding these intricate and intimate imbrications is critical to theorizing the circulations of increasingly transnational movements of feminism, postcolonialism, and technoscience.

Two theoretical pieces (by Sandra Harding and Angela Willey) serve as bookends of sorts, seeking to challenge and expand our contemporary definitions and deployment of feminism, postcolonialism, and technoscience. Three empirical cases grounded in Argentina, South Africa, the United States, and the United Kingdom (by Lindsay Smith, Laura Foster, and Ruha Benjamin) animate technoscientific protocols and techniques in these varied geographical contexts.

In the first essay of the collection, "Latin American Decolonial Social Studies of Scientific Knowledge: Alliances and Tensions," feminist philosopher of science Sandra Harding opens the issue with challenging our definitions of postcolonialism. Focusing specifically on Latin American decolonial and borderland critiques to illustrate this emerging literature's distinctive contributions to postcolonial theory developed in South Asian and Middle Eastern contexts, Harding expands our assumptions about colonialism and its afterlives. She also highlights alliances and tensions that this literature has with coproductionist STS. As Harding points out, decolonial studies predate by several centuries colonial and postcolonial studies of South Asia and the Middle East by focusing on colonial expansion in the Americas. By expanding the temporal reaches of colonialism, highlighting its very different formations in the Americas, and enumerating the importance and strengths of decolonial theory of Latin American scholars, Harding reminds us both to expand our definitions of colonialism, postcolonialism, feminism, and technoscience and to rethink genealogies of the sociology of scientific knowledge.

The first of the three empirically driven papers follows well from this epistemological exploration by analyzing a rich Latin American case. Anthropologist Lindsay Smith's "Identifying Democracy: Citizenship, DNA, and Identity in Post-Dictatorship Argentina" investigates how forensic DNA techniques became a powerful site in which to challenge and reimagine identity, citizenship, and belonging. During Argentina's Dirty War and other "cold" wars across Latin America, hundreds of thousands of men, women, and children were rendered missing. In postdictatorship Argentina, Smith recounts how "family-based social movements," in particular, the Grandmothers of the Plaza de Mayo, used forensic DNA technology as a tool to find those who were still alive as well as the graves or remains of their children and relatives. In particular, these *Abuelas* used the

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technology to find their "disappeared" grandchildren who had been placed with wealthy families of the ruling elite during the cold war. Smith recounts how DNA tests often reveal unexpected family histories for many individuals, becoming a moment of traumatic discovery as well as one of remembering. Smith powerfully describes how the *Abuelas* use their identity status as powerful grandmothers while at the same time reaching out for new scientific techniques in forensic DNA to seek justice for their families. The results are consoling for some and traumatic for others. Ultimately, Smith argues that we need to understand genetic technologies as a "powerful disciplinary" site of biocitizenship, forcing Argentina to reckon with its violent history and allowing the *Abuelas* and their grandchildren to reconstruct families. Despite the power of the techniques and the reconciliation of so many families, Smith also reminds us that we must look beyond the liberatory potential of DNA technologies to understand how the same technology ultimately reinscribes "biology" as the proper and "authentic" site of family-making and belonging. By reckoning with its violent history, the nation is forced to reimagine the social contract between the body, the public, and the state through technoscientific tools of "re(con)stitution" that locate kinship, belonging, and citizenship in the DNA.

Belonging is also a central theme in "A Post-Apartheid Genome: Genetic Ancestry Testing and Belonging in South Africa," in which feminist legal scholar Laura Foster examines a genetic ancestry testing program called the Living History Project (LHP). Imagined as a technoscientific and cathartic exercise to rectify the deep fissures and violence of apartheid South Africa, the LHP sought to analyze the genetic ancestry of a wide range of South Africans so that they could discover for themselves "where we come from and who we are." Ultimately, the organizers expected participants to discover their shared genetic histories, revealing not a racially segregated society reminiscent of the ideologies of apartheid but a postapartheid, democratic, "rainbow nation." In a fascinating account of the unfolding of the LHP, Foster reminds us of how deep social histories and ethical assumptions get encoded into "scientific" projects of ancestry testing. In the LHP, "race," she concludes, could never be contained in its biogenetic definitions but rather constantly emerged in unexpected and complicated ways. She considers the many assumptions made by a variety of players who participated in this project. Foster reminds us that while some critics have dismissed the LHP as reinforcing a biological notion of race and others have suggested that it has supplanted political racial histories, neither critique captures the complexities of the project. In bringing a diverse set of participants to engage in a democratic and social

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transformative science, Foster argues that there is power and possibility in technoscientific projects such as the LHP in fostering nation-building and democratic ambitions. Yet, identity, citizenship, belonging, and history are far more complex. They are constantly escaping and exceeding the project's biogenetic parameters, leaving us with many tensions and contradictions even while offering us hope for reconciliation and democracy. Foster argues that the LHP's postapartheid genome can offer a nonracial (though still not necessarily antiracist) model of South African belonging.

Sociologist and African American studies scholar Ruha Benjamin's "Informed Refusal: Toward a Justice-Based Bioethics" underscores a theme that emerges in Foster's and Smith's papers—that questions of kinship and justice emerge in relationship with questions of science and technology as the latter strives toward a feminist postcolonial bioethics. In this essay, Benjamin examines three sites of technoscientific deployment—"refusing therapy" by challenging the need for medical treatments and intervention by doctors in the United States, "refusing translation" by challenging the ethics of consent in genetic samples in South Africa, and "refusing refugees" by challenging the biogenetic definition of identity and nationality in the United Kingdom. Through these three intriguing cases, Benjamin challenges both the dominance of Western technoscience in the world and the idea that Western technoscience is the best arbiter of communities. By focusing on sites that have been marginalized consistently by the histories of Western technosciences, Benjamin foregrounds active and powerful publics and communities who challenge Western science and technology by their right of "refusal" and assert their rights to define the health, identity, and citizenship of their own communities. Benjamin reminds us that Western technoscience is deeply imbricated in complex structures of power and through these cases she shows us the limits of an "individualized" system of accounting. By demonstrating that power works in more complex and unexpected ways than often imagined, she argues for a more "justice-oriented" approach, which reclaims the epistemological and political value of refusal as an important act of technoscientific engagement.

Following these located and concrete human stories at quite particular geopolitical margins, the final essay of this special issue draws on a very different but intriguingly complementary kind of storytelling: that within contemporary feminist theory amid the new materialist turn. In her essay, "A World of Materialisms," gender and queer studies scholar Angela Willey channels the multilocalities, multiepistemologies, excesses, and contradictions of the earlier essays, in calling for us to move from our

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conception of a unitary "science" to a world of "sciences" and technosciences. In an essay that draws explicitly on Sandra Harding's body of work, Willey argues that if a science that is rooted in Eurocentrism and colonialism gets to set the terms of what "matters" both materially and politically, alternative materialisms are rendered beyond the scope of analysis and Eurocentrism and colonialism are left unchallenged. By bringing analyses of power—in particular, feminism and postcolonialism—into contemporary theories of "matter" and materialisms, Willey argues, feminist science studies can better engage with the insights of feminist postcolonial studies. Willey powerfully reminds us of what is at stake in creating more expansive, pluralistic, and capacious definitions of science, matter, and nature and why we need to bring the fields of feminism, postcolonalism, and technoscience into more enlivened and deeper conversations.

All five of the papers exemplify the value of feminist postcolonial perspectives for STS. Through careful engagement with ongoing theoretical debates and new empirical material, they contribute to multiple fields. They also set an agenda by integrating careful accounts of the world as it is with aspirations for a more just world as we would have it to be. For those who strive for a feminist postcolonial critique and practice, our righteous anger and our fervent hopes can be illuminated through our accounts of resisting and retooling wide-ranging products and processes of technoscience.

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