Engaging Science, Technology, and Society 2 (2016), 214-226 DOI:10.17351/ests2016.74

Bridgework:
STS, Sociology, and the "Dark Matters" of Race

MICHAEL RODRÍGUEZ-MUÑIZ[1]
NORTHWESTERN UNIVERSITY

Abstract
This short essay reflects on intellectual bridges that scholars have built, are building, and could build to connect critical sociologies of race and STS. Whereas much work in these respective fields have rarely intersected, greater exchange could help scholars better account for ways in which race shapes and stratifies contemporary societies. To this end, the essay begins with a recent example of bridgework—research on race and genetics. Next, I use my own research on ethnoracial statistics to describe how bridgework happening elsewhere can indirectly create openings for connections across the divide. Finally, I propose that research on the broader sociotechnical materiality of race and racial domination represents an important site for further bridgework.

Keywords
STS; bridgework; critical sociology; race and racial domination; materiality

> *We are all members of more than one community of practice and thus of many networks, at the moment of action we draw together repertoires mixed from different worlds. Among other things, we create metaphors—bridges between those different worlds.*
> —Susan Leigh Star (1991, 52)

Introduction
Twenty-six years ago, John Law (1990, 2), one of the founders of Actor-Network Theory, spoke of a "great divide" between "critical sociology" and "new writing on science and technology." Describing himself as having "a foot in both camps," he acknowledged, "much of the best work

[1] Michael Rodríguez-Muñiz, Email: michael.rodriguez@northwestern.edu

in STS is indeed more or less blind to the great distributions, the pains, sought out by, pressed on, and more or less hesitantly described by sociology" (2). As a result, STS scholars—with the exception of those engaged in feminist or labor-focused research—were, Law admitted, at least *partially* guilty for silences on questions of class, gender, and race. But Law also maintained that critical sociology bore equal responsibility for the great divide. By judging STS on its weaknesses rather than its strengths, critical sociologists had not "successfully distinguished between the analytical wood of STS and some fairly manifest deficiencies in the trees that make it up." Consequently, they were unable to recognize that STS concerns "*could* feed into and strengthen the central sociological concern with distribution" (2, emphasis in original). In short, the great divide had, for Law, dampened awareness of the complementary potential between STS and critical sociology.[2]

Writing a generation later, I take this essay as an opportunity to reflect on this "great divide." Like Law, I have feet in both camps, but I tend—for various reasons—to place more weight on my sociological foot. Unlike him, however, my concern here is not with the global relationship between critical sociology and STS. Rather, for reasons that will become clear, my concern lies with the particular divide between STS traditions and critical sociologies of race. In this, my main objective here is not to diagnose this divide, to explain factors that contribute to its permanence, or even to convince skeptical readers that the divide exists and is a serious problem. Instead, I seek to highlight the intellectual bridges that scholars have built, are building, and could build across this divide. Bridgework makes it possible to travel and share concepts, questions, and techniques across "epistemic communities" (Knorr-Cetina 1999). In a sense, it represents a practice of "ontological politics," of making the *otherwise* (Mol 1999).

This essay, therefore, emphasizes not divides, but bridgework.[3] I hold the conviction that bridgework is vitally important to the study of race and racial domination—what sociologist Howard Winant (2015, 313) has evocatively termed the "'dark matter' of the modern epoch." Bridgework recognizes that accounting for the often taken-for-granted, occluded and yet powerful ways that "race" matters in contemporary societies requires more than sociology. Consequently, some scholars have turned to STS for new insights and sensibilities. Importantly, this bridgework has not only affected sociology, but has created pressures for STS to grapple with race and racism, both as it permeates sociotechnical systems and scholarly networks.

I begin by sketching a recent case of bridgework, which was somewhat ironically provoked by what anthropologist Nadia El-Haj (2007) has described as the "genetic reinscription of race." Among other things, this bridgework provides an example of *direct* efforts to connect critical sociologies of race and STS. Next, I describe how bridgework elsewhere can *indirectly* create possibilities for interface across the divide. To illustrate this point, I draw on my own research on the politics of ethnoracial statistics, which has benefited from bridgework between STS and the sociology of statistics. Finally, I propose further bridgework on the sociotechnical materiality of race and racial domination. Such bridgework, I believe, could help us better

[2] This divide has not been helped by the polemical clash between Pierre Bourdieu (2004) and Bruno Latour (2005).
[3] Bridgework can happen at various scales—from individual scholars attempting to connect disparate literatures to collective projects seeking to connect fields. Knowledge production, we know, is inescapably a practice of *bricolage*.

appreciate and address how racial "dark matter" is intimately and inextricably linked to the *matters*, and not simply, the meanings, of race.

Bridgework-in-Action

Ten years after the publication of Law's discussion of the "great divide," sociologists David Skinner and Paul Rosen (2001) assessed the topical status of race and racism in STS. They found little positive change. In fact, to the contrary, Skinner and Rosen concluded, "as social studies of science and technology have grown in size and respectability, questions of race and racism seem to have dropped down or off the academic agenda" (289). Although the thrust of their criticism still holds considerable weight today, race has arguably inched closer to the center of STS concerns. Indeed, STS researchers and their colleagues elsewhere have engaged in bridgework around the theme of race and genetics (e.g. Fullwiley 2008, Fujimura and Rajagopalan 2010, Montoya 2011, Roberts 2011, Bliss 2012, Nelson 2016).

Ironically, perhaps, this bridgework was spurred—even made necessary—by the recent and apparent reemergence of "race" as a biological category in the wake of the mapping of the human genome. While some scholars have persuasively shown that notions of biological race were never entirely jettisoned (Reardon 2005), the past decade or so has witnessed an upsurge in biological—or rather—genetic conceptions of race in medical fields, biotechnological development, criminal justice, and public discourse (Roberts 2011). This is especially intriguing given the fact that the completion of the human genome was initially heralded as the death knell of biological race.

Similar to, and in conversation with, their colleagues in other fields, sociologists have begun to unpack the relationship between race and genomic knowledge across what Stefan Timmermans and Shostak (2016) call "gene worlds." These gene worlds are sites and networks where genetic knowledge is produced and consumed. Read with attentiveness towards bridgework, this scholarship attests to numerous connections and exchanges between STS and critical sociologies of race. Let me briefly provide a few examples.

Some research has welded thematic interests across fields. For instance, in *Race Decoded*, Catherine Bliss (2012) focuses on the racial subjectivities of geneticists. Racial subjectivity and identity is a staple of sociological research on race, but rarely have scholars examined the perspectives and aspirations of scientists. Of course, these kinds of actors have been the centerpiece of much STS research, particularly "lab ethnographies." Yet, rarely have these works analyzed the racial identities and commitments of scientific "tribes" (Latour and Woolgar 1986). In a recent article, Ruha Benjamin (2014) explicitly bridges social studies of science and medicine and the sociology of race to investigate how biomedical recruitment strategies—specifically forms of "trust talk"—reproduce and construct racial boundaries. Benjamin finds a pervasive cultural binary "in which consent and compliance are implicitly coded 'White' while dissent and refusal are coded 'non-White'" (758). In these and other works, scholars have also expanded the horizon for sociological research on ethnoracial politics in the post-civil rights era. In particular, recent

research on race, genetics, and health has shed light on the messy politics and unintended effects of what Steven Epstein (2008b) has called the "inclusion and difference paradigm."

Bridgework also involves interfacing concepts and theories**.** In the extant scholarship, STS concepts, such as translation, standardized packages, boundary-work, and boundary-objects, have been put to use to understand the interplay between racial categories and genetic knowledge (e.g., Shim 2002, Fujimura and Rajagopalan 2010, Bliss 2013). Jenny Reardon (2005), for instance, adopts Sheila Jasanoff's (2004) influential "co-production" framework to examine the Human Genome Diversity Project. This framework allows Reardon to explicate how—on the terrain of debates over diversity, ethnoracial categories, and genetic knowledge—natural and social orders are mutually implicated and constituted. Researchers have also drawn on the conceptual tools from sociological studies of race. Take, for example, Alondra Nelson's (2008) article in the *Social Studies of Science* on the "affiliative self-fashioning" of African American and Black British genetic ancestry test-takers. Among other conceptual resources, Nelson makes use of sociologists Omi and Winant's (1986) concept of "racial projects" to highlight the ways in which "contests over the 'reality' of 'race'" cannot be reduced to a clash between "social" and "biological" definitions of race (775).

Recent scholarship—as the previous examples suggest—challenges and complicates what many sociologists of race have taken as "social construction." Along with work in critical epidemiology, STS critiques of modernist divisions between "nature" and "culture" (Latour 1993, Haraway 1997) have inspired some researchers of race to think of the relationship between biology and society in more nuanced and relational ways. Sociologist Troy Duster (2003), for example, has developed the notion of a "feedback loop" to capture how living in a racially stratified society can lead to disparities in health outcomes. Similarly, sociologist and legal scholar Dorothy Roberts (2011) has explored the embodiment of racial stresses and stratifications—an angle that STS scholars have rarely examined (Pollock 2015). Thus, while such scholars importantly maintain that race is a sociopolitical designation rather than a biological trait, they exhibit greater attentiveness towards the complex interactions between social dynamics, genetics, and environment.

The interface and welding of concerns and concepts from STS and critical sociologies of race has provided new foundations for mutual engagement. It is noteworthy that the first themed book review of the new journal *Sociology of Race and Ethnicity* was dedicated to recent interdisciplinary and STS research on race and science (Garner 2015). Still more, in a recent issue of the *Annals of the American Academy of Political and Social Science* on this very theme, race scholars Matthew Hughey and Carson Byrd (2015, 251) advocate for social scientists of race to "invest in (become versed and fluent in) more science and technology studies and interdisciplinary work that neither dismiss biology nor promote it as the primary explanation of behavior." In struggles against revived biological reductionism in the public sphere and in the academy, bridgework has proved a vital resource.

Building on Foundations

In the previous section, I presented a recent case of bridgework—recent research on genetics and race—to highlight direct interfaces between STS and critical sociologies of race. In this section, I wish to show how bridgework happening elsewhere can *indirectly* create openings for connections across the divide. Let me clarify what I mean by using an example from my own research.

My current research investigates contemporary political struggles over ethnoracial demographic change in the United States. Against the widespread scholarly and public treatment of "demographic change" as a "matter of fact," I approach this topic as a "matter of concern" (Latour 2008). Specifically, I seek to understand how racialized conceptions of the future are being produced and mobilized for political effect in the present, and what impact these efforts are having on collective identities and political imaginaries. As entrée into these dynamics, I focus on a network of national Latino civil rights organizations and leaders actively seeking to capitalize on the so-called "Browning of America."

This work builds on scholarship in sociology, but also far beyond it. A key anchor for me is sociological research on "racial knowledge" (Goldberg 1993). Here I have rested heavily on a subset of work on censuses and ethnoracial categorization (e.g., Choldin 1994, Rodríguez 2000, Paschel 2013, Morning 2011, Mora 2014, Loveman 2014). This research treats the meaning of ethnoracial categories neither as self-evident nor as static. In addition, scholars have shown that the meaning and membership of these categories are often sites of political contestation and negotiation. Although these insights are important for my research, questions of categorization do not account for the totality of issues under investigation. Consider, for instance, the following ethnographic vignette.

In April 2012, months before the general election, I visited Los Angeles to attend Voto Latino's first "Power Summit." Voto Latino is a nonpartisan Latino civic engagement organization founded in the mid-2000s to empower "Latino Millennials to claim a better future for themselves and their community." At the closing plenary of its summit, held at the University of Southern California, the organization's executive director gave a speech to inform and incite those present, nearly 600 high school and college students from around the country. She was assisted by a bright colored PowerPoint presentation. Nearly each of the slides was populated by demographic statistics—sometimes presented simply as figures or in various sorts of charts. One slide, in particular, seemed to grip the imagination of those present. The slide—supplemented by her articulation—presented the statistic, 50.5 million, the number of "Latinos" enumerated by the 2010 U.S. census. As I surveyed the room, many of the students seemed surprised by the figure, as if they had never encountered it before. Surprise turned to awe and then into pride. Down my row I saw, for instance, numerous participants energetically jotting notes and heard chatter behind me about this figure, now an ethnoracial emblem. I witnessed as this cold fact warmed the room and helped galvanize many of the youth present to join the organization's efforts to translate "raw" demographics into "political power." Attempts to understand this scene (and many others like it) demanded a broader purview than ethnoracial categorization. It also called for consideration of the politics of statistics.

With few exceptions, sociologists of race have been largely inattentive to the role of statistical knowledge in ethnoracial politics and identities. Similar to their counterparts in the wider field, they have regularly used statistics as a "means" for analysis, but have rarely made statistics an "object" of investigation (Starr 1987, 8). Fortunately, for my research, I have been able to build on growing sociological interest in the role of numbers, metrics, and rankings in social life (Espeland and Sauder 2007, Vardi 2014, McFall 2011, Waidzunas 2012, e.g., De Santos 2009, Leibler 2014). This research has built on the pioneering work of historians and philosophers of science, such as Mary Poovey, Ian Hacking, Michel Foucault, and Theodore Porter. It has also engaged with STS scholarship. STS has provided scholars with new insights into the performativity of statistics, that is, how statistics "help to enact the world that they describe" (Law 2009, 249). For instance, scholars have turned to the work of Bruno Latour to understand how statistics can gain power and authority as they circulate (e.g., Curtis 2001, Hansen and Porter 2012, Mathews 2008, Rose 1991).

Drawing on interdisciplinary scholarship on numbers and statistics, recent research has helped to revive the "sociology of statistics" (Starr 1987), as well as inaugurate what Espeland and Stevens (2008) label the "sociology of quantification." While this work has rarely focused on the quantification of race (for some exceptions, see Hirschman, Berrey, and Rose-Greenland 2016, Loveman 2014, Zuberi 2001), growing bridgework between sociologists of quantification, STS, and diverse interdisciplinary communities has created openings for me to investigate and theorize the contextual interplay between ethnoracial categories and calculations, as well as the sociotechnical means by which demographic projections are produced, circulated, and demonstrated in public life. Bridging the divide between critical sociologies of race and STS does not always involve direct exchanges, such as those described in the previous section. As briefly described here, opportunities for bridgework can also grow out of openings indirectly made possible by exchanges taking place outside of the specific study of race.

Expanding Horizons

In their important critique of STS, David Skinner and Paul Rosen (2001) offer three recommendations to help move race up the research agenda. First, STS must "acknowledge the profoundly racialized character of social life" (291). Second, they emphasize the need for STS to "explore the processes whereby science and technology are racialised" (292). Third, and finally, Skinner and Rosen recommend that STS "engage with a new science of racial difference" (294). To some extent, research has begun to heed—knowingly or not—the second and third recommendations. Things get a bit trickier with the first, and broadest, recommendation. Even when STS scholarship has been attentive to race, its emphasis on scientific knowledge has tended to encourage a far "too narrow a conceptualization of the salience of race" (Pollock 2015, 252). One way to interpret this is that scholars have not dealt enough with questions of racial domination. If this interpretation holds, one solution could be to administer a greater dose of critical sociological works on race and racism. Perhaps, but I would like to suggest another

potential solution—one that also could improve critical approaches. The solution I propose is bridgework around the *sociotechnical materiality* of race.

This proposed bridgework would build on a chief insight of critical sociologies of race, namely that "race" is a central organizing principle in social life. Winant (2015, 322) describes it as "the often invisible substance that in many ways structures the universe of modernity"—hence the metaphor of "dark matter." Sociologist and theorist of race, Eduardo Bonilla-Silva (2012, 174) has recently written about the structurally grounded "racial grammar" of white supremacy. This grammar, he argues, "provides the 'deep structure,' the 'logic' and 'rules' of proper composition of racial statements and, more importantly, of what can be seen, understood, and even felt about racial matters." Bonilla-Silva goes on to liken the racial grammar to "air pollution"—"hard to see clearly yet it is out there poisoning us all" (186). But racism is not merely *like* air pollution or other toxins; rather these are some of its very manifestations. Indeed, research on environmental racism (e.g., Bullard 1993, Pellow 2002) has shown that low-income communities of color tend to endure greater exposure to environmental degradation and pollution. However, while critical sociologists of race insist that racism has material effects and structural foundations, researchers have tended to be more concerned with the meaning of race rather than the *matters* of racial domination. Except for the human body, materiality has remained largely absent from sociological work on race. It represents, arguably, one of the field's "ontological myopias" (Rodriguez-Muñiz 2015).

In contrast, STS traditions, such as Actor-Network Theory, have powerfully foregrounded what Latour (1992) once described as the "missing masses"—material objects, technologies, and devices. In the article cited at the beginning of this essay, John Law (1990, 8) writes, "We are dealing with a form of distribution built deep into sociology—the distribution between people on the one hand, and machines on the other. Or between 'social relations' or 'social structure' on the one hand, and the 'merely technical' on the other." This separation prevents sociology from appreciating, or even coming to terms with, the agency of nonhumans, entities that Latour (1990) insists make society durable. What might we gain by migrating these arguments to understand the "dark matter" of race? What would it mean for critical sociologies of race to experience a "material" turn? How might greater sensibility towards the agency of devices or other material entities help us better understand the permanence of, and even resistance to, particular racial (infra)structures and orders?

To take up such questions, we would do well to turn to those scholars who have focused on the sociotechnical materiality of race (e.g., Martín 2001, Montoya 2011, M'charek 2013, Braun 2014). Historian and STS scholar Lundy Braun (2014) provides an important starting point. In her work on race, lung capacity, and precision instruments, Braun invites researchers to explore how race can "get embedded into the very architecture of scientific instruments" (xxi). Braun undertakes this agenda in her analysis of the spirometer, a precision instrument used to statistically measure lung capacity. She narrates how racial (and racist) assumptions shaped the very design of the spirometer and, as a result, the knowledge it produced. Giving greater—that is more symmetrical—attention to material objects is a key part of capturing the material enactment of race. As anthropologist Amade M'charek (2013, 424) states, "The challenge in studying race is

to denaturalize without dematerializing it, and to simultaneously attend to materiality without fixing race."

Attending to material objects, however, should not be confined to the objects of knowledge production. In the spirit of the STS move to go beyond the laboratory (Epstein 2008a, Baiocchi, Graizbord, and Rodriguez-Muñiz 2013), we must begin to document the complex relations between diverse material objects, discourses, and practices involved in the production and reproduction of forms of racial privilege and disadvantage. Ta-Nehisi Coates (2014), in his much-discussed article, "The Case for Reparations," provides an example relevant to this discussion. Midway through his article, Coates describes the practice of "redlining," which began in the 1930s and would dramatically shaped the configuration and development of cities throughout the United States:

> The Federal Housing Authority had adopted a system of maps that rated neighborhoods according to their perceived stability. On the maps, green areas, rated "A," indicated "in demand" neighborhoods that, as one appraiser put it, lacked "a single foreigner or Negro." These neighborhoods were considered excellent prospects for insurance. Neighborhoods where black people lived were rated "D" and were usually considered ineligible for FHA backing. They were colored in red. Neither the percentage of black people living there nor their social class mattered. Black people were viewed as a contagion. Redlining went beyond FHA-backed loans and spread to the entire mortgage industry, which was already rife with racism, excluding black people from most legitimate means of obtaining a mortgage.[4]

Examinations into the broader sociotechnical materiality of race offer a potential site for further and future bridgework between critical sociologies of race and STS. To this point, STS scholarship, despite its attention to material objects, has said very little about the materials and matters of race. By the same token, while objects such as "redlining" maps are not entirely absent from sociological research on race, they remain under-theorized. In such works, objects can be racialized—that is, given racial meaning and significance—but they are, in themselves, treated more or less as blank canvasses without affordances (Gibson 1979). History, however, gives us too many examples to believe this is the case. Consider the role and centrality of material objects in the struggle to end Jim Crow in the U.S. South, such as drinking fountains, bus seats, and diner counters—or those objects used to reassert white supremacist rule, such as water hoses and bombs. Or consider the effects of borders, drones, technologies of surveillance, and police armaments. Perhaps, we should return to Langdon Winner's (1980) famous, yet controversial essay, "Do Artifacts Have Politics?"[5] For, as Winner argued, "the issues that divide or unite

[4] For an early scholarly analysis of the origins of "redlining," see Jackson (1980).

[5] At the heart of controversy over Winner's (1980) article was his description of the Long Island bridges designed by the famed city planner, Robert Moses. Drawing on evidence from Moses' biographer, Winner argued that Moses deliberately built bridges with low-hanging overpasses in order "to limit access of racial minorities and low-income groups to Jones Beach, Moses's widely acclaimed public park" (124). This claim was challenged on evidentiary grounds by Jeorges (1999) and Woolgar and Cooper (1999), who also critiqued Winner for failing to recognize the "essential ambivalence of

people in society are settled not only in the institutions and practices of politics proper, but also, and less obviously, in tangible arrangements of steel and concrete, wires and nuts and bolts" (128).

Conclusion

In the short, but characteristically dense essay, *Bridge and Door*, German sociologist Georg Simmel (1994 [1909], 5) wrote, "In the immediate as well as the symbolic sense, in the physical as well as the intellectual sense, we are at any moment those who separate the connected or connect the separate." For Simmel, this human "will to connection"—as he phrased it—reached its "zenith in the construction of a bridge" (6). While we may reject Simmel's many dualisms, the metaphor of the bridge usefully serves what I take to be one of the major tasks of this Thematic Collection of *Engaging Science, Technology, and Society*: to reflect on the connections—past, present, and potential—between and among the field of science and technology studies, the discipline of sociology, and the world beyond the academy.

We can assume that the bridges connecting STS to other intellectual formations will, upon inspection, reveal considerable variation, just as actual bridges do. Bridges can be made of stone, wood, and steel. They may be new or old, sturdy or unstable, well kept or decayed, used or abandoned. In this essay, I have focused on bridgework between critical sociologies of race and STS. John Law (1990), as I noted above, identified the existence of a "great divide" between critical sociology and science studies and insisted on their complementary potential. Here, I adopt a similar position and argue that greater interface could help strengthen and expand our knowledge of (and potentially our challenge to) the "dark matter" of racial domination.

I do not, however, want to give the impression that bridgework is a simple or always successful practice. It involves cobbling together ideas and instruments, sometimes in a selective and not necessarily systematic manner. In a way, these bridges are monstrosities (Law 1990). Those invested in conceptual, theoretical, and methodological purity are forewarned. Of course, it is not for me (or anyone) to predict whether the intellectual bridges I have described or proposed will hold. But what we do know comes from harvesting insights from both sides of this divide. Whether these bridges have an afterlife will be contingent on whether—as STS scholars have argued—these bridges are used and manage to enroll others, and also whether—as critical sociologists of race have argued—scholars, particularly racially privileged ones, are willing to "open up the white box" of knowledge production (Skinner and Rosen 2001, see also Zuberi and Bonilla-Silva 2008). In essence, only time will tell.

---

artefacts" (443). These critiques, Rowland and Passoth (2015) lament, seem to have made Winner's question about the politics of objects "no longer worth raising, not even for the purposes of rejecting or re-directing it."

Acknowledgements

This essay originated as a presentation at the "New Directions after a Quarter-Century of the Sociology of Science, Knowledge, and Technology," a mini-conference organized by the Science, Knowledge, and Technology (SKAT) Section of the American Sociological Association in August 2015. Many thanks to Steve Epstein and the rest of the organizing committee for the opportunity to participate in the conference's closing plenary session. I also thank Daniel Lee Kleinman and Katie Vann for their editorial assistance.

References

Baiocchi, G., D. Graizbord, and M. Rodriguez-Muñiz. 2013. "Actor-Network Theory and the Ethnographic Imagination: An Exercise in Translation." *Qualitative Sociology* 36: 323-341.

Benjamin, R. 2014. "Race for Cures: Rethinking the Racial Logics of 'Trust' in Biomedicine." *Sociology Compass* 8 (6): 755-769.

Bliss, C. 2012. *Race Decoded: The Genomic Fight for Social Justice*. Stanford: Stanford University Press.

Bliss, C. 2013. "Translating Racial Genomics: Passages in and Beyond the Lab." *Qualitative Sociology* 36 (4).

Bonilla-Silva, E. 2012. "The Invisible Weight of Whiteness: The Racial Grammar of Everyday Life in Contemporary America." *Ethnic and Racial Studies* 35 (2): 173-194.

Bourdieu, P. 2004. *Science of Science and Reflexivity*. Chicago: University of Chicago Press.

Braun, L. 2014. *Breathing Race into the Machine: The Surprising Career of the Spirometer from Plantation to Genetics*. Minneapolis: University of Minnesota Press.

Bullard, R. D., ed. 1993. *Confronting Environmental Racism: Voices from the Grassroots*. Boston: South End Press.

Choldin, H. M. 1994. *Looking for the Last Percent: The Controversy Over Census Undercounts*. New Brunswick: Rutgers University Press.

Coates, T.-N. 2014. "The Case for Reparations." *The Atlantic*, 54-71. http://www.theatlantic.com/magazine/archive/2014/06/the-case-for-reparations/361631/.

Curtis, B. 2001. *The Politics of Population: State Formation, Statistics and the Census of Canada, 1840-1975*. Toronto: University of Toronto Press.

De Santos, M. 2009. "Fact-Totems and the Statistical Imagination: The Public Life of a Statistic in Argentina 2001." *Sociological Theory* 27 (4): 466-489.

El-Haj, N. A. 2007. "The Genetic Reinscription of Race." *Annual Review of Anthropology* 36: 283-300.

Epstein, S. 2008a. "Culture and Science/Technology: Rethinking Knowledge, Power, Materiality, and Nature." *The Annals of the American Academy of Political and Social Science* 619 (1): 165-182.

Epstein, S. 2008b. *Inclusion: The Politics of Difference in Medical Research*. Chicago: University of Chicago Press.

Espeland, W. N. and M. Sauder. 2007. "Rankings and Reactivity: How Public Measures Recreate Social Worlds." *American Journal of Sociology* 113 (1): 1-40.

Espeland, W. N. and M. L. Stevens. 2008. "A Sociology of Quantification." *European Journal of Sociology* 49 (3): 401-36.

Fujimura, J. H. and R. Rajagopalan. 2010. "Different Differences: The Use of 'Genetic Ancestry' Versus Race in Biomedical Human Genetic Research." *Social Studies of Science* 41 (1): 5-30.

Fullwiley, D. 2008. "The Biologistical Construction of Race `Admixture' Technology and the New Genetic Medicine." *Social Studies of Science* 38 (5): 695-735.

Garner, S. 2015. "Themed Book Review Section: Race and Science." *Sociology of Race and Ethnicity* 1 (3): 460.

Gibson, J. J. 1979. *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.

Goldberg, D. T. 1993. *Racist Culture: Philosophy and the Politics of Meaning*. Malden: Blackwell Publishers.

Hansen, H. K. and T. Porter. 2012. "What Do Numbers Do In Transnational Governance? ." *International Political Sociology* 6 (4): 409-426.

Haraway, D. 1997. *Modest_Witness@Second_Millennium.FemaleMan_Meets_OncoMouse: Feminism and Technoscience*. London: Routledge.

Hirschman, D., E. Berrey and F. Rose-Greenland. 2016. "Dequantifying Diversity: Affirmative Action and Admissions at the University of Michigan." *Theory and Society* 45 (3): 265-301.

Hughey, M. W. and W. C. Byrd. 2015. "Beautiful Melodies Telling Me Terrible Things The Future of Race and Genetics for Scholars and Policy-Makers." *The ANNALS of the American Academy of Political and Social Science* 661 (1): 238-258.

Jackson, K. T. 1980. "Race, Ethnicity, and Real Estate Appraisal: The Home Owners Loan Corporation and the Federal Housing Administration." *Journal of Urban History* 6 (4): 419-452.

Jasanoff, S. 2004. *States of Knowledge: The Co-Production of Science and Social Order*. New York: Routledge.

Jeorges, B. 1999. "Do Politics Have Artefacts? ." *Social Studies of Science* 29 (3): 411-431.

Knorr-Cetina, K. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge: Harvard University Press.

Latour, B. 1990. "Technology is Society Made Durable." *The Sociological Review* 38 (S1): 103-131.

Latour, B. 1992. "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts." In *Shaping Technology/Building Society: Studies in Sociotechnical Change*, edited by W. E. Bijker and J. Law, 225-258. Cambridge: MIT Press.

Latour, B. 1993. *We Have Never Been Modern*. Cambridge: Harvard University Press.

Latour, B. 2005. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.

Latour, B. 2008. *What is the Style of Matters of Concern? Two Lectures in Empirical Philosophy*. Amsterdam: Van Gorcum.

Latour, B. and S. Woolgar. 1986. *Laboratory Life: The Construction of Scientific Facts*. Princeton: Princeton University Press.

Law, J. 1990. "Introduction: Monsters, Machines and Sociotechnical Relations." *The Sociological Review* 38 (S1): 1-23.

Law, J. 2009. "Seeing Like a Survey." *Cultural Sociology* 3 (2): 239-256.

Leibler, A. 2014. "Disciplining ethnicity: Social sorting intersects with political demography in Israel's pre-state period." *Social studies of science* 44 (2): 271-292.

Loveman, M. 2014. *National Colors: Racial Classification and the State in Latin America*. Oxford: Oxford University Press.

M'charek, A. 2013. "Beyond Fact or Fiction: On the Materiality of Race in Practice." *Cultural Anthropology* 28 (3): 420-442.

Martín, C. E. 2001. "Mechanization and 'Mexicanization': Racializing California's Agricultural Technology." *Science as Culture* 10 (3):301-326.

Mathews, A. S. 2008. "State Making, Knowledge, and Ignorance: Translation and Concealment in Mexican Forestry Institutions." *American Anthropologist* 110 (4): 484-494.

McFall, L. 2011. "A 'Good, Average Man': Calculation and the Limits of Statistics in Enrolling Insurance Customers. " *The Sociological Review* 59 (4): 661-684.

Mol, A. 1999. "Ontological Politics: A Word and Some Questions." In *Actor Network Theory and After*, edited by J. Law and J. Hassard, 74-89. Oxford: Blackwell Publishers.

Montoya, M. 2011. *Making the Mexican Diabetic: Race, Science, and the Genetics of Inequality*. Berkeley: University of California Press.

Mora, G. C. 2014. *Making Hispanics: How Activists, Bureaucrats, and Media Constructed a New American*. Chicago: University of Chicago Press.

Morning, A. 2011. *The Nature of Race: How Scientists Think and Teach About Human Difference*. Berkeley: University of California Press.

Nelson, A. 2008. "Bio Science: Genetic Genealogy Testing and the Pursuit of African Ancestry." *Social Studies of Science* 38 (5): 759-783.

Nelson, A. 2016. *The Social Life of DNA: Race, Reparations, and Reconciliation After the Genome*. Boston: Beacon Press.

Omi, M. and H. Winant. 1986. *Racial Formation in the United States: From the 1960s to the 1980s*. 2nd ed. New York: Routledge.

Paschel, T. 2013. "'The Beautiful Faces of my Black People': Race, Ethnicity and the Politics of Colombia's 2005 Census." *Ethnic and Racial Studies* 36 (10): 1544-1563.

Pellow, D. N. 2002. *Garbage Wars: The Struggle for Environmental Justice*. Cambridge: MIT Press.

Pollock, A. 2015. "On the Suspended Sentences of the Scott Sisters Mass Incarceration, Kidney Donation, and the Biopolitics of Race in the United States." *Science, Technology & Human Values* 40 (2): 250-271.

Reardon, J. 2005. *Race to the Finish: Identity and Governance in an Age of Genomics*. Princeton: Princeton University Press.

Roberts, D. 2011. *Fatal Invention: How Science, Politics, and Big Business Re-Create Race in the Twenty-First Century*. New York: The New Press.

Rodríguez, C. E. 2000. *Changing Race: Latinos, the Census, and the History of Ethnicity in the United States*. New York: New York University Press.

Rodriguez-Muñiz, M. 2015. "Intellectual Inheritances: Cultural Diagnostics and the State of Poverty Knowledge." *American Journal of Cultural Sociology* 3: 89-122.

Rose, N. 1991. "Governing by Numbers: Figuring Out Democracy." *Accounting Organizations and Society* 16 (7): 673-692.

Rowland, N. J. and J.-H. Passoth. 2015. "Infrastructure and the State in Science and Technology Studies." *Social Studies of Science* 45 (1): 137-145.

Shim, J. K. 2002. "Understanding the Routinised Inclusion of Race, Socioeconomic Status and Sex in Epidemiology: The Utility of Concepts from Technoscience Studies." *Sociology of Health & Illness* 24 (2): 129-150.

Simmel, G. 1994 [1909]. "Bridge and Door." *Theory, Culture & Society* 11 (1): 5-10.

Skinner, D. and P. Rosen. 2001. "Opening the White Box: The Politics of Racialised Science and Technology." *Science as Culture* 10 (3): 285-300.

Star, S. L. 1991. "Power, Technologies and the Phenomenology of Conventions: On Being Allergic to Onions." In *A Sociology of Monsters? Essays on Power, Technology and Domination*, edited by J. Law, 26–56. London: Routledge.

Starr, P. 1987. "The Sociology of Official Statistics." In *The Politics of Numbers*, edited by W. Alonso and P. Starr, 5-57. New York: Russell Sage Foundation.

Timmermans, S. and S. Shostak. 2016. "Gene worlds." *Health:* 20 (1): 33-48.

Vardi, Itai. 2014. "Quantifying Accidents: Cars, Statistics, and Unintended Consequences in the Construction of Social Problems over Time." *Qualitative Sociology* 37 (3): 345-367.

Waidzunas, T. 2012. "Young, Gay, and Suicidal: Dynamic Nominalism and the Process of Defining a Social Problem with Statistics." *Science, Technology & Human Values* 37 (2): 199-225.

Winant, H. 2015. "The Dark Matter: Race and Racism in the 21st Century." *Critical Sociology* 41 (2):313-324.

Winner, L. 1980. "Do Artifacts Have Politics?" *Daedalus* 109 (1): 121-136.

Woolgar, S. and G. Cooper. 1999. "Do Artefacts Have Ambivalence? Moses' Bridges, Winner's Bridges and Other Urban Legends in S&TS." *Social Studies of Science* 29 (3): 433-449.

Zuberi, T. 2001. *Thicker Than Blood: How Racial Statistics Lie*. Minneapolis: University of Minnesota Press.

Zuberi, T. and E. Bonilla-Silva, eds. 2008. *White Logic, White Methods: Racism and Methodology*. Lanham: Rowman & Littlefield Publishers.