

Banu Subramaniam

Ghost Stories for Darwin: The Science of Variation and the Politics of Diversity
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Ghost Stories for Darwin is a radically interdisciplinary feminist treatment of the scientific concept of "variation" and the social and political concept of "diversity." The book uses fiction and autobiography, history and philosophy of science, experimental biology, and feminist theory as modes of inquiry to reveal the co-production of (natural) variation and (cultural) diversity. An ambitious feat of naturecultural theory, the book uses an ethos of curiosity common to both feminism and biology to guide the reader through a rich and multifaceted analysis of how we got here, to the material-discursive reality in which we find ourselves: selves entangled with other selves, beings, and types of being and with histories we would rather not claim. Subramaniam deftly demonstrates that our epistemological orientations and preoccupations, valuation of peoples and things, and our very material forms are haunted by eugenic histories. The book tells these ghost stories--these accounts of the conformation of social and scientific interest in difference--with painstaking care and brilliant clarity. And yet it still does more, or perhaps more aptly, wants more, asks more. An epigraph from the book's conclusion takes a famous line from *The Little Prince*: "If you want to build a ship, don't drum up people to collect wood and don't assign them tasks and work, but rather teach them to long for the endless immensity of the sea." Subramaniam doesn't provide us a program for the building of feminist sciences so much as she teaches us to long for real reckoning with the ghosts of naturecultural histories of difference, for ways of knowing that exceed the narrow offerings of either cultural critique or positivism institutionalized in Science. The book is a treasure trove of inspiration and resources for theorizing both the naturecultural and knowledge-production in (those departments, programs, and other scholarly formations formerly known as) women's studies.

In three parts--on "genealogies," "geographies," and "biographies" of variation--Subramaniam carefully maps and recursively traces the stakes of disrupting the nature/culture split that structures knowledge-production for both feminism and biology. From the social lives of morning glories to invasion biology and immigration politics to the making of disciplined knowers, we are learning to think natureculturally. Readers who begin the book thinking their interests are primarily in either nature (the science) or culture (the history and politics) are drawn in by the transparency of the book's major conceit: that the seemingly self-evidently discrete agendas of understanding culture and understanding nature are both well served--and their fictive autonomy undone--by thinking natureculturally.

Beginning with morning glory flowers as nature-cultural objects, Subramaniam weaves a tale of her own shifting encounters through the metaphor of the twisting morning glory plant. One of

the great strengths of feminist science studies--perhaps because of its deft analyses of the work of scientific metaphor--is its production of fantastically generative metaphors of its own. The twisting morning glory works well to help the reader imagine how to think nature-culturally: start from the stories and stay with them, follow along their twisted and tangled paths. The critic who would reduce "stories" to culture or contest their materiality is engaged with a deep sense of shared purpose in the pages of *Ghost Stories*. Subramaniam clearly demonstrates through this botanical case study how materiality is obscured by inattentiveness to stories. I've yet to see a development of Haraway's concept of natureculture that so successfully navigates the risks of slipping into a formulation that ends up privileging one of the constitutive parts of that formulation (nature or culture) as somehow primary. The result of this careful curiosity-driven methodology is a refreshingly counter-intuitive call for both greater epistemic modesty *and* more ambitious querying.

The book is, among other things, an invitation to feminism to engage science's proper objects. The invitation is, well, inviting, as it bears no trace of that familiar call to redress "feminist antibiologism" (Ahmed 2008). Grounded in feminist theories of science, power, and difference, the book historicizes mistrust of the biosciences. Rather than lamenting feminism's failures, it calls us to think of feminist space as a space of possibility for knowing and doing biology otherwise.

In my own attempts to operationalize the Harawayan concept of naturecultures, I have become convinced that a major obstacle to doing naturecultural research, or to developing what Subramaniam calls adisciplinary approaches, is entrenched ways of narrativizing and categorizing feminist approaches to science. The typology Myra Hird uses in her 2004 review of new materialist approaches to sex is exemplary: she offers critique, extraction, and engagement as the three feminist modalities for relating to science (Hird 2004). Subramaniam's book more elegantly and persuasively than any I've read illustrates the absolutely vital role of "critique" *in* "engagement." She shows how the most seemingly self-evident questions from one disciplinary perspective are embedded in the culture of that field and how a little bit of insight from another perspective can shift our understanding of an object's meaningful properties. Stories inevitably change data. Critical engagement with stories always has implications for what we know of the materiality of our worlds. Nothing can be dismissed as "merely cultural." And this is not just a compelling proposition, but the empirical thread (or perhaps rather the morning glory vine) that runs through the entire book.

But what of the ghost of Darwin himself, haunting feminist studies of science (and indeed the cover of the book!)? In her review of *Ghost Stories*, Donna Jones laments that the book never reckons with Elizabeth Grosz's *Becoming Undone: Darwinian Reflections on Life, Politics, and Art*. She suggests that *Ghost Stories* would be strengthened by highlighting the affinity of its intellectual and political project with Grosz's (Jones 2015). I, too, would like to have seen those connections fleshed out. I believe attention to the shared and distinct ambitions of these two books vis à vis the figure of Darwin could be enormously generative. Grosz makes a number of moves, some quite original and exciting, to rescue the historical Darwin and his theories of natural selection from their association with eugenics.

Subramaniam's book, in contrast, places Darwin within a broader history of evolutionary theory that is itself, she argues, the history of eugenics. And she defines eugenics as "an argument about the value and purpose of variation." She seems to ask the reader to resist the urge to

condemn or reclaim that history (as those are normally the options), and instead to begin by acknowledging that we're living with ghosts. The science of variation here is inevitably haunted by the specificities of colonialisms and racial and gendered violences that have shaped debates about the politics of diversity. Science and scientists in her genealogy of variation are not innocent of politics, genius victims of political misuse. A strength of the book, as I've said, is the extent to which it is able to demonstrate how intrinsically science and politics are woven together. In this sense, *Ghost Stories* seems to have strong implications for disrupting the good Darwin vs. bad Darwin debate. I would love to hear more on how Subramaniam's genealogy of variation speaks to Grosz's Darwinism and vice versa. What do they offer each other? What questions do their points of tension raise for feminist science studies, feminist epistemologies, and feminist theories of difference?

In and beyond its treatment of the life and work of the historical Darwin, *Ghost Stories* is truly a women's studies book. It is marked as such by its promiscuous methodological borrowing, eclectic engagements with an impressive variety of texts and contexts, and in its bold foregrounding of feminist political desire and the project's stakes. To illustrate the eclecticism of the book: chapter 2's epigraphs alone come from Audre Lorde, F. Scott Fitzgerald, and a bumper sticker: "Shake your family tree and watch the nuts fall!" The book also defies genre, extending and reconfiguring questions of disciplinarity, accessibility, and what it means to be a researcher. In so doing, it offers itself up as a book about and for women's studies. It should be read by those interested in the field's formation and continued evolutions. Its implications for what we do with our critiques of the neoliberal university are vast. In chapter 3's account of a fictional science, to which I will return, three women earn a joint PhD and build a vast, deep, and intimate expertise on local ecology and health over three decades. This sort of collaboration and this kind of time are indeed the stuff of fairy tales.

The fantasy of living and working together sparked my interest and excitement as a critic of the monogamy ideal and the naturalization of the nuclear family form. This fairy tale is not only one of knowledge-production, "work" freed of neoliberal temporality, but one of "life" freed of the definitional imperative of reproductive futurity. Like Robin Wiegman and Lynne Huffer, who have written about the straightness of academic life and the "life" imagined by work-life balance discourse (Wiegman 2000; Huffer 2013), Subramaniam asks us to consider what it would mean to queer our academic lives. In reading about this team of three researchers--T3--laughing together, teasing one another, explaining their insights to one another, I was reminded of Lorde's critique of the reduction and containment of the erotic within sexuality. The longevity, intimacy, and dynamism of this imaginary research collaboration is truly inspiring. It raises the question: what conditions might lend themselves to such possibilities? What would it look like to transform graduate training--perhaps the key site for the disciplining of minds, according to the book--such that possibilities for both collaboration and slowing down were made possible?

I will wrap up here with just a few more questions, which I hope will spark dialogue. This is not a book (only) to be mined for rich and pithy quotes (although you'll find them) or for a reading list embedded in dense footnotes (you'll find that, too). This is a book to read with your students, colleagues, and collaborators. This is an invitation to feminist knowers to dream big and not see current obstacles as necessary limits.

My lingering questions are about Subramaniam's provocative call for what she calls "adisciplinarity." She writes a compelling critique of graduate school as a site of disciplining of

minds and methods that forecloses possibilities for building knowledges that can be truly transformative. It is in a wholly fictional science that we get a glimpse of how it could be different. I have begun asking of my students and colleague friends who've already read the book: Is the possibility of "adisciplinary" knowledge-production necessarily fictional? How might we understand the possibilities of "fictional science" in naturecultural research? What academic and extra-academic sites have the potential to foster this type of slow-moving, deeply collaborative feminist science in practice? Or perhaps from a slightly different angle, (how) can emerging paradigms of radical interdisciplinarity within the academy (across the humanities and natural sciences) and beyond facilitate this type of training? Within women's studies, what barriers exist to realizing the potentiality of adisciplinary knowledge-production? How might women's studies in general as well as specific departments and programs, and individuals as advisors and professors, resist the forces that limit possibilities for collaborating and taking time? The material stakes of undisciplining our knowing are extraordinarily high. Let's make the time to think and talk about how to reckon with the ghosts that haunt our halls and mark the current limits of "interdisciplinary" fields like women's studies.

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