International Journal of Gender, Science and Technology
http://genderandset.open.ac.uk

A Review of *Ghost stories for Darwin: the science of variation and the politics of diversity* by Banu Subramaniam'

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PUBLICATION DETAILS
Date: 2014
Published by: Urbana, Chicago and Springfield: University of lllinois Press
ISBN: 0252038657

REVIEW

Knowledge is rigorously divided into disciplines, each with their own practices, and then grouped into sciences, social sciences, humanities and arts. Schools, colleges and universities are organised into departments and faculties to reflect these distinctions, and a whole apparatus of testing, curricula, publishing and funding perpetuates them. Interdisciplinary work is constrained by these, and even 'interdisciplinary fields' such as women's studies that often combine the humanities and the social sciences, eschew the natural and physical sciences. The starting point for this book is Banu Subramaniam's experience of studying biology and women's studies simultaneously. As she moved between these different spaces, with their different questions, approaches and rules of the game, she found herself changing her appearance and her behaviour. She came to understand that 'disciplinary work – epistemology and ontology – is learned behaviour' and to embark on a journey of unlearning (p.29). This book tracks that journey.

> Traversing liminal spaces, traveling the hallways of academia, at the borderlands of disciplines … Almost there, but never quite. Meandering, half mesmerized, half muddled, always mumbling. Dare I speak? Almost there, but never quite. Almost a scientist, yet a feminist; almost a feminist, yet a scientist; almost a resident, yet an alien; almost an alien, yet a resident; almost a heterosexual, yet homosexual; almost a homosexual, yet heterosexual; almost an Indian, yet American, almost American, yet an Indian; almost an outsider, yet inside; almost an insider, yet outside … Almost there, but never quite. A life held captive in oppositions. How did I find myself in this tantalizing, much celebrated place, the home of the oxymoronic feminist scientist, this magical yet insane place … nowhere, yet everywhere all at once? (p.vii)

In *Ghost Stories for Darwin*, Subramaniam develops what she calls a naturecultural approach to three collections of questions. In the first section, she looks at diversity by revisiting her doctoral study on colour variation in morning glory flowers. In the second, she looks at immigration through the lens of invasion biology (the study of the movement of species throughout the world, as well as their subsequent spread and impacts). In the final section, she focuses on women in science. 'At the heart of all three of these sites … was the central question of variation' (p.7). Subramaniam explores how we understand variation and why it is so central to both evolutionary biology and women's studies. In interrogating these themes, we learn to see the ghosts of eugenics that haunt biology: the neglected questions and subjects that haunt all fields of study and those 'whose lives were abbreviated by a brutal history, rendered invisible, whose genius was never realized, and whose voices were silenced by a disciplinary history devoid of people' (p.6).

Given the disciplinary context into which Subramaniam is writing, readers will probably be attracted to different sections of the book. The final section does a good job of exploring the gendering of science, including the neglected topic of how the exclusion of women is reinforced by the corporatisation of universities. It contains an account of empirical research that looks at how doctoral students and staff understand the unwritten rules governing graduate education. Subramaniam includes her raw data – the lists of rules compiled by different groups. These are fascinating to read and there are some striking contrasts between staff and students. For example, the staff rule 'graduate education should be the major focus of your life' becomes 'work all the time with no break' and 'don't have a life outside the department (or don't talk about it)' from the students' perspective. However, as someone who works on issues of gender and science, I did not feel I learnt anything new in this third section of the book. In contrast, I found the first two sections enjoyable and provocative and felt that the interdisciplinarity had more purchase there.

The first section sets out to create a genealogy of eugenics exemplified by the morning glory which Subramaniam describes – using Donna Haraway's term – as a 'companion species', a naturecultural plant, 'whose evolutionary and migratory history is deeply implicated in human histories' (p.38). She unpicks the relationship between genetics and eugenics, through looking at how they are connected through the meaning and value of variation. She then completes the section with a tale of three young women who encounter researchers from philosophy, psychology, biology, anthropology and many more fields engaged in studying a morning glory field in the Indian village where they live. This section is an enjoyable interruption to the academic style of the rest of the book, as Subramaniam uses fiction to imagine these young women forcing the researchers into dialogue with each other over dinner and

so developing and then realising a collective dream of working fluidly across disciplinary boundaries.

In the second section we see how 'humans, plants, and animals share incredibly intertwined histories' (p.109). All are often welcomed into countries in need of their 'expertise, skills, or beauty at one point in history only to be severely regulated once they are here, and then rejected, shunned, and sent back once they have outlived their usefulness' (p.109). The parallels continue in fears of foreign invaders and of exotic oversexed females and in the irrational attacks on the Northern Snakehead (dubbed the Frankenfish) in the wake of 9/11. These examples are worked through in exquisite detail and provide a compelling case for much more naturecultural work and for the transformations of our academies that would be required to make this possible.