

## BOOK REVIEW/COMPTE RENDU

**Celia Roberts**, *Messengers of Sex: Hormones, Biomedicine and Feminism*. Cambridge Studies in Society and the Life Sciences. New York: Cambridge University Press, 2007, 248 pp. \$US 34.99 paper (978-0-521-68197-1), \$US 90.00 hardcover (978-0-521-86337-7)

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Biological technoscience has been attracting a lot of attention in recent years. Topics such as genomics, cloning, and stem cell research have generated many hopes and fears for the future. In *Messengers of Sex*, Celia Roberts makes the case that, as genes have captured our interest, we have lost sight of the importance of hormones. She rightly points out that while contemporary genetics promises much, the scale of hormonal interventions into human and animal bodies is actually far greater. Conceptualizing hormones as “messengers of sex,” Roberts sets out her case for their importance to a critical feminist analysis of the relation between the biological and the social.

Social theory has for some time been engaged in a wide-ranging attempt to engage with the materiality of bodies, and *Messengers of Sex* can be located within this literature. She aims to integrate three theoretical approaches that address themselves to the biological dimension of life: feminist theories of embodiment; science and technology studies (STS); and the work of Michel Foucault. The latter is largely an absent presence in the book, however, and the real theoretical work is at the intersection of STS and feminism. This is a significant move in itself, as these are two traditions that have not often been brought together, despite the common ground between them.

Drawing on the work of Judith Butler, Elizabeth Grosz, and Rosi Braidotti, Roberts argues that feminism must engage seriously with the material dimension of life, while at the same time recognizing that there is no direct access to materiality outside of history and culture. She also claims, however, that existing feminist theories tend to remain at the level of abstract generality and fail to provide detailed encounters with biological forces. This is where STS comes in. Roberts draws on Bruno Latour’s actor network theory in order to understand how nonhuman actors, such as hormones, can be seen as active participants in specific interactive processes that contribute to the production of both sexual differences and normative technoscientific discourses. Yet, she is also

wary of the absence of attention to structures of power and knowledge in Latour's work and thus turns to Donna Haraway's more critical approach to technoscience to provide the key theoretical tools for her analysis. Haraway's concepts of "material-semiotic actors" and "articulation" (which implies a relationship between two active entities, rather than simply the representation of one by another) are employed by Roberts in order to argue that "while hormones may excite or provoke sexual difference through their effects on bodies, they neither simply express nor produce sex" (p. 22). Instead, the act of messaging is privileged as co-constitutive of both sender and receiver.

This argument unfolds across the three parts of the book. The first two contain material that will be familiar to readers versed in feminist science studies. Part One details the history of hormones from their uncertain conceptual formulation as messengers of sex within a context governed by nineteenth-century understandings of sexual differences to the establishment of a biologically-determined "hormonal body" by the 1930s. Here, as in other places throughout the book, Roberts draws upon Nelly Oudshoorn's (1994) work on the social production of "sex hormones" in the 1920s and 1930s. Roberts does not significantly extend her historical account beyond this period, however, and chooses not to discuss, for example, Marianne van den Wijngaard's (1997) study of the role that hormones played in neuroendocrinology and the establishment of ideas concerning male and female brains from the 1960s to the 1980s. This is a curious decision as van den Wijngaard's work also draws on actor network theory and would seem relevant to the theoretical argument that Roberts pursues in her text.

Rather than taking up a more extended historical analysis, Part Two of *Messengers of Sex* critically examines contemporary understandings of hormones in endocrinology and how they are used to explain sexed behaviours. These chapters effectively deconstruct technoscientific discourses on the role of hormones in producing sexual differences by showing that the distinctions that scientists often draw between stories and facts, and between the biological and the social, collapse under closer scrutiny. Roberts's intention here is not to argue that science is merely a product of culture, but rather, to develop an account of hormones as "material-semiotic actors" that deliver messages of sexual difference both materially and discursively.

The third part of the book is the most interesting, to my mind, as Roberts uses this new understanding of hormones to analyse biomedical uses of exogenous hormones. She focuses on practices and discourses associated with hormone-replacement therapies (HRT) and how they materialise specific forms of embodiment. Roberts does an admirable

job analysing the intersections between gender, sexuality, race, and class in the promotion of HRT. She has a particularly keen eye for the way in which conventional accounts of menopause as pathology rely on heteronormativity as well as a naturalized version of femininity, and for how liberal models of “choice,” which place the responsibility on women to decide whether to have HRT, effectively ignore power relations that position women as consumers rather than politically-engaged actors. At the same time, the analysis here does not simply concern women. Roberts also examines the marketing of HRT to men as solution to “problems” related to aging and declining levels of testosterone. She argues that “HRT for men combines elements of discourses on cosmetic surgery and Viagra by promising to sustain a particular vision and experience of the male body as muscular *and* sexually active in particular ways” (p. 131).

The final topic addressed in the book is environmental hormones (specifically, oestrogens), or what are known as endocrine-disrupting chemicals. While noting the existence of legitimate concerns about hormones in the environment, which are also sometimes referred to as “gender-bending” chemicals because of their ability to affect the sexual embodiment of living organisms, Roberts shows that many oppositional discourses mobilize problematic assumptions about heteronormativity and the relation of sexed biologies to gendered behaviours. Her point, however, is that they do so in a way that is inextricable from the material effects of these hormones, which we encounter in the world. This is what Roberts refers to as the domain of the “bio-social,” where nature and culture become indistinct as hormones transgress the limits of individual bodies.

The conclusion to *Messengers of Sex* attempts to situate sex hormones in relation to Foucault’s notion of biopower, insofar as they are deployed to control both individual bodies and the population via contraception and infertility drugs. Unfortunately, the use of hormones in the reproductive domain is virtually ignored in the pages that precede this claim. Nevertheless, I have few reservations in recommending this book. It successfully manages to blend theory and critical analyses in an accessible way, while generating new insights into the complex relations between the biological sciences and sexual differences.

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