

Amade M'charek**The Human Genome Diversity Project: An Ethnography of Scientific Practice.**

Cambridge University Press, 2005, 224pp.

\$US 29.99 paper (0-521-53987-0), \$US 75.00 hardcover (0-521-83222-5)

Unlike the Human Genome Project (HGP), whose aim was to produce a benchmark version of the human genome, the Human Genome Diversity Project (HGDP) sought to map human difference. It was envisaged as a multi-national and interdisciplinary project that would not only produce medically significant findings, but would also provide insight into the origins of human populations and their migratory patterns. The project, however, required the collection of genetic material from a variety of indigenous "populations" valued for their "homogeneity" and their presumed "isolation"; this proved more difficult than its promoters had foreseen. As M'charek writes, "the Diversity Project was linked with concerns about economic exploitation in terms of gene patenting and the development of expensive medication, with the development of ethnic weapons ('gene-bombs') and racism, with bio-piracy and bio-colonialism and with a sheer interest in the history of populations rather than their futures (p. 12).

ELSI-type (Ethical, Legal and Social Implications) approaches have rapidly become the suture of choice whenever the moral, ethical or political fabric is torn by new research initiatives or developments in the fields of human genetics, genomics or biotechnology more generally. The first ELSI program was famously launched with the HGP. Since then, ELSI has successfully adapted to the selective pressures in the science governance environment. Thus, it is not surprising that when the HGDP — which was floated in the early 90s contemporaneously with the HGP — met with a spot of bother, some ELSI unguent was eventually applied to soothe the irritation (see the comments of one the HGDP's key promoters, Luca Cavalli-Sforza (2005a, 2005b)).

ELSI's detractors argue that by focusing on a narrow range of actionable issues (e.g. informed consent, privacy), it provides legitimacy to projects like the HGP and HGDP while avoiding the broader social, political, economic and cultural questions. Hence, they rightfully, to my mind, argue for the need to widen the ELSI problematic. However, what Amade M'charek reveals in her ethnography of scientific practice is that there is much that can be gained by narrowing the focus even further: an understanding of how populations, individuals, genetic markers, sex, similarity and difference are enacted in myriad laboratory practices also promises to shed light on these broader questions. To give one example, at the end of chapter two, which explores the emergence of different conceptions of the notion of population in a forensic DNA laboratory, she writes: "In a laboratory setting, neither the individual nor the population is treated as a matter of definition, but rather as a matter of technologies, established practices and routines...The question prompted by this concerning population, is of course, how do we want to be made in to population?" (p.49). A question well worth dwelling on indeed!

M'charek's study is not about the public HGDP controversy; it does not stage the public claims of its promoters or critics. Instead it focuses on the socio-technical production of genetic difference and similarity in the everyday work of two laboratories working on some dimension of genomic diversity, one in Leiden, the Netherlands, the other in Munich. For M'charek, "[t]he notions of enactment or performativity are used to emphasize that objects (such as diversity, population, individual, etc.) emerge in practices consisting of individuals, technologies, language and theories among others. Objects are dependent on such practices and may fail to exist outside of these" (p. 49). M'charek's deployment of this theoretical and conceptual apparatus provides richly textured

accounts saturated with insight into the socio-material constituents of genetic diversity.

She explores the complex relationship between the “individual” and the “population” in the context of a Forensic DNA laboratory. She analyzes the hybrid nature of genetic markers, which are simultaneously a technology for visualizing difference and an object of study in their own right, concluding that “[r]ather than a universal tool, a good genetic marker is a highly invested category in which diversity resides” (P.77). In addition, M'charek elucidates the social and technological co-production of *Anderson*, a mitochondrial DNA reference sequence, and its subsequent naturalization and its function as a standard in the field. She, also, explores the socio-material processes through which the “sex” of DNA samples appears and disappears.

Since the 1970s, STS (Science and Technology Studies) laboratory studies have documented with great empirical richness and considerable conceptual creativity the complex processes and social relations underpinning laboratory life. These studies have contributed to debunking the cognitive idealism prevalent in much renderings of the production of scientific knowledge. By exploring how knowledge practices exist in, and travel through, physical and social space, they have made visible the sociotechnical arrangements that co-produce social relations and knowledges. M'charek's study is an excellent contribution to this body of work. It is a rigorous, reflexive, thoughtful and compellingly written book.

My only reservation is the lack of any serious treatment of power struggles and conflict in the laboratory practices she otherwise so perspicaciously documents. Rather ironically, at times, her accounts of laboratory life seems almost Mertonian in nature. That being said, this book is STS at its very best. The converted will no doubt enjoy and learn from it. For those sceptical of STS's ability to explore broader ethical and political questions, this book might very well convince them that STS has much to contribute not despite its focus on laboratory work but precisely because of it.

References

Cavalli-Sforza, L. (2005a) Studying diversity, *EMBO reports*. 6(8): p. 713.

Cavalli-Sforza, L. (2005b) The Human Genome Diversity Project: past, present and future, *Nature Reviews Genetics*. 6(4): pp. 333-340.

José López
Department of Sociology and Anthropology
University of Ottawa
jlopez@uottawa.ca

José López is currently researching the processes through which ELSI fields have been, and are being constituted, as forms of expertise with a “legitimate” claim to participate in the governance of biotechnology and nanotechnoscience and its implications for the democratic control of science policy.

<http://www.cjsonline.ca/reviews/humangenome.html>
July 2006

© Canadian Journal of Sociology Online