

## Book Review

### **Lively Capital: Biotechnologies, Ethics, and Governance in Global Markets**

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In the twilight of the 20th century, Jeremy Rifkin's *The Biotech Century* (1998)<sup>2</sup> and Richard Oliver's *The Biotech Age* (2003)<sup>3</sup> expressed mixed feelings about the prospect of capital expansion through biotechnological innovation. The former was terrified while the latter was excited about this prospect.<sup>4</sup> Twelve years into the 21st century, the question that arises is, what is the actual relationship between the life sciences and the market? Rajan's collection of essays addresses this question by bringing together cultural anthropology and science and technology studies.

The book begins with the editor's introduction, arguing that there are certain overlaps between the development of life science epistemologies and the epistemologies of neo-liberal economics. The latter consists of value systems which are distinct from those Marx traced during the first industrial revolution. Rajan points out that in the era of life sciences innovation the 'magic of capital' lies not in the creation and appropriation of surplus through exchange but in the creation and appropriation of 'the new thing'. This is what he calls lively capital. However, drawing on the recent work of Laurence Reynolds and Bronislaw Szerszynski,<sup>5</sup> one might question the existence of lively capital on the grounds that biotechnology has never become a 'lead industry' in the way that steam power or electricity did in the early period of capitalist expansion. Indeed, as Reynolds and Szerszynski claim:

...fundamental to the period of renewed capitalist growth around the closing decade of the twentieth century was a relatively 'low tech' ensemble of cranes, diesel engines, containers, ships and logistical information technologies, not the spawn of the 'high-tech' R&D labs of the 'knowledge-based economy'.<sup>6</sup>

This claim, of course, does not imply that there is no co-production of life and capital. Rather it implies that new life science technologies have not yet revolutionised the means of production.

Rajan's book tries to understand the co-production of life and capital in the 21st century. In order to do so, it is divided into four parts. Part I is entitled 'encountering value' and includes three chapters on valuing illness, dogs and air. In chapter 1, Joseph Dumit criticises clinical trials, screening programmes and other data collection tools which are used in the propaganda for the increased use of drugs. In his view it is illness as value that is now being maximised, and the health of patients. This view is confirmed by recent research that suggests pharmaceutical companies increase profits from selling new drugs with minor clinical advantages over existing treatments.<sup>7</sup> Therefore they do not depend on research breakthroughs. Dumit correctly argues that,

in fact, the capitalist logic that Marx studied is mirrored by the strategies of pharmaceutical executives and marketers. In chapter 2, Donna Haraway takes this argument further by examining companion-species kin patterns of consumerism. According to her, there is an increase in the availability of treatments and health insurance for pets. Today's lively capital practices are reflected in this particular phenomenon of consumerism. In chapter 3, Timothy Choy examines the quality of air in cities such as Hong Kong. This chapter is very interesting; Choy considers various health issues, stressing that stratification of air spaces in Hong Kong have been tied to income and occupations.

Part II is probably the most important part of the book because it focuses on property and dispossession, key elements of capital expansion. In chapter 4, Sheila Jasanoff opens the discussion by raising one crucial question: when does something in nature become property? To answer this question, she explains the logic of Western legal systems, emphasising their utilitarian character:

no private use, the law imagines, could possibly outweigh the public benefit of a nature whose works and workings remain available in equal measure, to everyone (p.158).

In order for an inventor to claim an IPR on a natural object, he/she has to change the quality of the object itself. Jasanoff is critical of specific IPRs such as patents that confer temporary monopoly to the holder contrary to the spirit of free competition. Her criticism is based on analysis of several cases, including the landmark court decision of *Diamond v. Charkabarty* in 1980 that enabled the extension of the appropriation of life sciences as intellectual property. In chapter 5, Elta Smith continues the topic of IPRs in genomics, examining rice genomes sequenced by public and private consortiums. In this context, she introduces the notion "hybrid properties" to describe the "bundles of rights" that range between fully protected private property and a completely accessible public domain. According to Smith:

"Hybrid properties" in genomic information represent a set of social classifications that have developed alongside the production of new scientific knowledge. In sharp contrast to traditional conceptions of the relations between science and law where knowledge generation is seen as separate from rule making, my account suggests that representations of the genome come into being with tacit property regimes attached to them. Thus property rights for biotechnology are emerging, not only in formal, top-down institutional processes such as patents suits, regulatory frameworks, or multi-lateral treaties and trade agreements, but also at diverse sites in the every day practices of genome research. (p.187).

Although Smith does not clarify whether she is concerned with IPRs as moral or legal rights, she concludes that different factors, including national interests, scientific norms and profitability, affect the way genome research is transformed into private property. In chapter 6, Travis Tanner moves on to discuss dispossession. The discussion is focused on two examples: an ongoing struggle for land rights and an incident of genetic theft that occurred in 1991 in Wellington Public Hospital in New

Zealand. Both examples come from a novel written by Patricia Grace, an indigenous writer from New Zealand. The examples are analysed in the light of Marx's critique of dispossession as a capitalist phenomenon with economic and cultural effects. In chapter 7, Kristin Peterson concludes this part of the book by discussing wealth accumulation and dispossession in Africa. This is the only chapter that focuses on a developing continent. Peterson analyses wealth extraction and dispossession as providing the ground in which competing kinds of capital find their roots and growth. She specifically draws on the case of Nigeria, arguing that the primary source of accumulation is not wage labour but government contracts and oil rent politics. In Nigeria, since the IMF structural adjustment, there has been a decline in drug manufacturing. Peterson looks at the excess of counter-freights, illegal drug markets, self-medication, and drug labelling problems as produced materiality and practice.

Part III focuses on global knowledge formations. In chapter 8, Andrew Lakoff combines ethnography and politics to analyse the case of a French company that tries to find genes linked to psychiatric illness among a group of Argentine patients. He makes the crucial point that lack of regulation in countries such as Argentina leave patients open to abuses of transnational genomics research. In chapter 9, Wen-Hua Kuo discusses the harmonisation of regulatory regimes. He shows how the world of pharmaceuticals itself formulates operational standards. His approach is both institutional and transnational. Kuo focuses on the case of the International Conference for Harmonisation (ICH). He analyses the issue of acceptability of foreign clinical data through comparison of three countries: Japan, Taiwan and Singapore. In chapter 10, Kim Fortun shifts focus from international to national, discussing biopolitics and informatic environmentalism. She is particularly interested in 'chemical security' arguing that in countries such as the United States, this notion of security has become the justification for withdrawing environmental risk information from the public domain.

Part IV, the concluding part of this book, is entitled 'promissory experiments and emergent forms of life'. In chapter 11, Mike Fortun discusses the role of promise in the multiple scientific, legal, political and cultural contexts. In his view:

genomics can't avoid playing beyond its means (p.334).

The performativity of promises can be seen in a number of examples, including deCode Genetics in Iceland. In chapter 10, Chloe Silverman focuses on the promise of new life sciences to treat autism and its symptoms. She calls attention to parents' movement on biomedical interventions for autism spectrum disorders. In chapter 13, Michael M. J. Fischer examines lively biotech and translational research. He argues that lively capital might be understood to include at least four kinds of capital: venture; corporate or government; intellectual; and symbolic and scientific. In his view, all these forms of capital are bankable and play a crucial role in bio-capitalism.

In the epilogue Rajan undertakes to thread together the variety of chapters and disciplines presented. This is a rather difficult task, given the lack of central narrative throughout the chapters. Rajan is aware of this difficulty and therefore he stresses that

his aim is not to create a unifying framework but rather to highlight specific points of convergence, divergence and distinction. These points concern empirical methodological and political questions. Although the contributors to this book address such questions differently, Rajan's conclusion is clear: the history and promise of life sciences are heavily over-determined by systems and logics of capital.

This book, despite its lack of central narrative and/or unifying framework, is an important collection of essays in the field of ethics and governance of new life sciences innovation, and deserves to be read by sociologists, ethicists, cultural anthropologists, and all those who work in this field.

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<sup>2</sup> J. Rifkin. 1998. *The Biotech Century: Harnessing the Gene and Remaking the World*. New York. Jeremy P. Tarcher/Putnam.

<sup>3</sup> R. Oliver. 2003. *The Biotech Age: The Business Biotech and How to Profit from It*. New York. McGraw-Hall.

<sup>4</sup> L. Reynolds and B. Szerszynski. 2012. Neoliberalism and Technology: Perpetual Innovation or Perpetual Crisis? In *Neoliberalism and Technoscience: Critical Assessment*. L. Pellizzoni and M. Ylönen. Farnham. Ashgate.

<sup>5</sup> Reynolds and Szerszynski op. cit. note 4.

<sup>6</sup> Ibid, p.34.

<sup>7</sup> D. W. Light and J. R. Lexchin. Pharmaceutical Research and Development: What do we get for all that Money? *British Medical Journal (BMJ)* 2012; 344, pp.1-5.