

points out the absence of a jurisprudence about rights and obligations, credits and responsibilities attributed to these new techno-scientific bodies, or subject-machines, which are slowly and imperceptibly populating our societies and can easily escape human control.

In conclusion, we can agree with the authors that in a world where social actions and identities are performed and shaped through the use of an interconnected system of technological prosthesis, it is necessary to regard materiality (food, material waste, mobile phones) as the place of a new agency and to urge social sciences and anthropology to take all these assemblages of humans and non-humans as their object of analysis.

References

- Castillo Sepúlveda, J. (2011) *Cartographies from the Margins: Outline of the Development and Application of Actor-Network Theory in Spain*, in “Tecnoscienza, Italian Journal of Science & Technology Studies”, 2, (1), pp. 93-111.
- Domenech, M. and Tirado, F. (1998) *Sociología simétrica. Ensayos sobre ciencia, tecnología y sociedad*, Barcelona, Gedisa.
- Gomart, E. and Hennion, A. (1999) *A Sociology of Attachment: Music Amateurs, Drug Users*, in J. Law, and J. Hassard, *Actor Network Theory and After*, London, Blackwell, pp. 220-247.
- Jaureguiberry, E. (1995) *Les branchés du portable*, Puf, Paris.
- Latour, B. (1992) *Where are the Missing Masses? A Sociology of a Few Mundane Artefacts*, in W.E. Bijker, T.P. Hughes and T.J. Pinch, (eds), *The Social Construction of Technological Systems. New Directions in the Sociology and*

History of Technology, Cambridge, MIT Press, pp. 225-258.

Law, J. and Bijker, W.E. (1992), *Postscript: Technology, Stability and Social Theory*, in W.E. Bijker and J. Law, (eds), *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Cambridge, MIT Press, pp. 290-308.

Pinch, T.J. and Bijker W.E. (1987) *The Social Construction of Facts and Artefacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other*, in W.E. Bijker, T.P. Hughes, T.J. Pinch, (eds), *The Social Construction of Technological Systems. New Directions in the Sociology and History of Technology*, Cambridge, MIT Press, pp. 17-50.

Dominique Vinck

Les Nanotechnologies

(Nanotechnologies)

2009, Le Cavalier Bleu, 127 pp.

Bernard Reber

(CNRS Research Center Meaning, Ethics, Society CERSES)

Written by the sociologist Dominique Vinck – professor of sociology of sciences and innovation at the Lausanne University, and former professor at the University Pierre Mendès-France – this very clear book introduces the reader to the controversies associated with nanotechnologies and tries to answer to these questions: What are the nanotechnologies? What are they for? Are the fears related to them

unfounded?

The book pretends not to be a book for scientific popularization of nanotechnologies but to treat what moves the “actors”: problems of technological and scientific policy, market creation, regulation through law or ethical committees, forms of public debate and research, and risk strategy.

The problem of nanotechnologies’ definitions runs throughout the book: they are controversies about their domain. Some of the chapters focus on different possible definitions of the nanotechnologies. According to the answer to the questions along the book, their ensemble could be broader or more precise.

Are they only objects which size is nanometres? If so, what are their sizes? Equal or inferior to 100 nanometres? Some definitions are based on their size, while others are based on their contents and their properties. Some are bottom-up (aggregation), while others are top-down (miniaturisation). The chemical reactivity of nanoparticules, for instance, is higher and reaches some quantum effects that change mechanical, optical, electrical and magnetic properties. Other definitions play with the possible applications of nanotechnologies or they answer to the question: Are they changing (revolutionizing) the science or not?

Possible applications and novelty are the two elements that could convince the investors and future users with possible new applications and

problem solutions: nanomedicine, sustainable development, communication, security or comfort. Despite some of these promises are closer to science fiction and far to be ready for uses, ethical controversies appear on possible uses or side effects that are welcome for some actors and frighten some others, who are speaking of “Yuck”. Vinck introduces here a connection with the transhumanist movement that want to be “more than human” and to go over the biological (mental and physic) aspects of the contemporary human being (p. 62). Owing to this Vinck deals with the political issues related to nanotechnologies and the equilibrium between actors, suggesting an orientation to the future, defining some priorities and game rules (p. 73). Furthermore, chapter three gives some examples of actors fighting against nanodevelopment. Among them he mentions (p. 26) Pieces and Labor (Pièces et main d’oeuvre – PMO), a group based in Grenoble, nearby the famous Micro and Nanotechnologies Innovation Campus Minatec Center (<http://www.minatec.org/en>). Their name, PMO, plays with GMO (Genetically Modified Organism), and tries to make the link with these organisms that are not welcome in France and broadly in Europe.

Dominique Vinck’ position on the relevance of this link is not very engaged: “surely, some elements of the GMO story could be found in the nanotechnologies case, but, very probably, the controversies will be more numerous and diverse” (p. 96).

According to the sociologist, the social questions connected with nanotechnologies are very important for their development. Paradoxically, only 0,4% of the expenses are dedicated to the study problems of such as risk assessment (p. 86) and “social inscription of nanotechnologies in society” (p. 122).

One of the main critical issues and a big challenge in this book of sociology of technologies concerned the study of the actors. As other sociologists of sciences and technologies, in fact, Vinck tries (p. 121) to “follow the actors”: State, industrials, researchers, social groups concerned, regulatory institutions. Actors and their nanotechnologies’ definitions are strictly related, since the latter are strategic for the allocation of resources (research subvention), for the legislation, the standardisation and for social acceptance (p. 20). However, the book does not follow the logic of different definitions and the beneficence of them for each actor. Moreover, Dominique Vinck tries to give some possible definitions at different parts of the book (p. 13, 22, 27, 28).

Vinck mentions the Precautionary principle (p. 92) that plays an important role in this controversy. We can regret his too simplistic way to present it, letting only place for the fears of researchers and people, or the opposition of industry against the “discouragement towards the progress”. It could have been very easy to mention the European definition from the Commission on the Precautionary Principle, a

consensual text very complete and operational.

Although some references are given to ethical committees (p. 127), the ethical controversy – which is important both in the discourses of pro or con actors and on the ontological level (that is the reality of these new entities and their impacts on human life and environment) – is very weak.

Moreover, another simplification in the book is about the participative democracy, which is presented as the solution (p. 105). This form of democracy is distinct from the direct and the representative democracy. Following Callon and colleagues (2001), Vinck proposes participative democracy as an alternative to representative and delegative democracy. Most of the experiments in Participative Technological Assessment (PTA), however, are not considered as an alternative even though they seem to be more consistent with representative democracy on specific issues. The direct democracy as well is not a system where the delegation of legislative power tends to disappear as Vinck writes, but there is also a form of complementarity. The problem with the PTA example is precisely to find the way to institutionalize PTA results and devices and to find their place in the ordinary politics. Indeed, very often they are only “one shot” experience, without strong assessment and with loss of proposals for the counselling in Parliament or in the appropriate institutional bodies.

In political sciences and philosophy the trend is now focused on deliberative democracy. The high epistemic challenge, recognized by Vinck throughout his book, needs high level of reflection and not only participation. These forums are not the panacea as he describes them, but I think they need as much expertise, know-how and assessment as the research on nanotechnologies. These participative devices could offer good public spaces to confront the different actors, following and defending different definitions of nanotechnologies. Among the requirements of a deliberative democracy, in fact, the main point is the obligation to present arguments. In one of the more prominent theory of the argument (Toulmin, 1958), an argument is composed of different steps. The first one is precisely to agree on data and definitions. It would certainly be a way to continue Vinck's book.

References

- Callon, M., Lascoumes, P. and Barthe, Y. (2001) *Agir dans un monde incertain*, Seuil, Paris.
- Toulmin, S.E. (1958) *The Uses of Argument*, Cambridge University Press, Cambridge.

Giuseppina Pellegrino

The Politics of Proximity. Mobility and Immobility in Practice

2011, Ashgate Publishing, 157 pp.

Andrés Felipe Valderrama Pineda

(Technical University of Denmark)

The Politics of Proximity, edited by Giuseppina Pellegrino, is one of the most salient contributions to the field of mobility studies and to sociology in general published in the last few years. The main reason for this is that it takes up seriously the question "why do we move so much?" This question is pertinent at a moment in history when two contradictory developments are happening: on the one hand, we have now all the technological development necessary to reduce corporeal travel and at the same time remain connected; on the other hand, the same technologies could support the old dream of living in the countryside and still be part of the urbanity, being permanently connected. However, never in history humans have travelled so much, and never in history humans have crammed so much into dense and expensive cities. Why does this happen? Why do we pay so much money to live in cities and travel in them and between them so often? In short, why do we take so much pain to be in proximity? This is the question for the politics of proximity that the various authors of this excellent compilation take up and