Yves Gingras
Sociologie des Sciences [Sociology of Sciences]
Paris: PUF, 2013, pp 127

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According to the author, sociologists of science have an unfortunate tendency to favor a polemic attitude in their field of study by excessively multiplying the theoretical currents and methods, and by being almost systematically opposed to their colleagues. This book intends to offer a synthesis of these various works, in a cumulative and integrative vision of the knowledge accumulated in this field. It comes in four parts, namely: (1) the socio-cultural foundations of science; (2) the institutions of science; (3) the social system of science; and (4) the social determinants of scientific knowledge.

In the first chapter, Yves Gingras succinctly addresses the developments of scientific activities in relation to the religious context, in relation to the emerging democracies and the growing importance of the expert's role, and finally regarding the redefinition of the contract between science and societies. The approach consists in profiling the contexts that allow science to flourish fully, and in attempting to go beyond the simplistic shortcut stating that religions are systematically opposed to science, while in contrast the political organization of liberal democracies is systematically the best soil for science. We notice that the predominant historicist vein, dear to the author, leads him along two complicated paths. To begin with, the framing he chooses is reductive. Religious issues are primarily treated on a 17th century basis, relations to democracy in sight of the 19th, and the social contract from the point of view prevailing in the post-war period. Assigning a central and specific standpoint to each era and according a dominating role to the historical context make the analytical framework unnecessarily rigid, whereas these themes are rather key threads beyond times and places. Besides, and this is undoubtedly more fundamental, this diachronic approach assumes the idea that some contexts favor the emergence of scientific activities more than others. Though he mentions nuances and counter-examples, the author always choses to explain rather than understand the events. However, it is not offensive to Comte nor to Merton to say that their work has been continued after them, and that there are alternatives to the causal and/or internalist analyses of scientific phenomena.
In the second chapter, we discover a panorama of scientific institutions. The academies and universities, or the learned societies, the organization of

laboratories, the disciplinary constitutions, the dissemination and training organizations are structures that display before our eyes the organizational framework of science. Here again the approach is largely historical, but it extends the argument to pre-modern contexts. By unfolding a series of facts that, the other way round, seems necessarily inevitable, this rationalist approach has a strong deterministic tinge. Apart from the fact that the sociological approach of the title is refuted, we hesitate between a scientist macro-history and anachronistic interpretations.

The third part deals with the “social system”. Regarding the increasing and constant autonomisation of science in the 19th and 20th centuries, Gingras focuses on the establishment of an order in the area, which is specific and has its standards, its logic, its setting, and its conflicts. This chapter, which deeply engages in the functionalist analysis of scientific values and standards, is probably the most mertonian. Further, the analyses dealing with the issues of production, peer recognition, stratification and hierarchy take a more critical turn. Remarkably, while today science is generally treated in conjunction with techniques (an approach summed up under the STS banner), the author focuses here on science for he considers that it belongs to an autonomous field of study, with its own actors and logic, its history, and a particular literature. One of the reasons for this choice is probably the decidedly internalist approach, rooted in a scholarship heavily impregnated with epistemic issues.

The fourth and final part takes shape around the "nebula" of social constructivism in science, and seeks to establish an inventory of the different recent approaches in social studies of science. There again, the presentation, from the beginning of the 20th century until the 1980s, is too easily chronological. Sociology of translation can be found in this chapter entitled "social determinants of scientific knowledge", together with the 'microlevel' approaches (which bring together ethno-methodologists, cognitivism, SSK, strong program...). The author does not really linger on these theoretical and methodological renewals but places them in a category of more descriptive than explanatory work – which is supposed to be the goal of the sociology of science. In this chapter, the author also proposes a very popperian version of scientific controversies, boiling down to argument contests, the outcomes of which are determined by the cognitive (theoretical and experimental) contingencies of the time. It is probably is a little more complex, insofar as controversies are a good way of questioning the scientific autonomy and the relations to actors of a different nature.

The book closes with a disconcerting conclusion: it shows us, with statistics to back up the demonstration, that today increasingly costly and instrumented science is essentially collective and largely globalized. This would force a comeback to normative concerns, necessarily treated on meso or macro scales. In the introduction, Gingras explained the need to combine the different levels of analysis, based on the principle that the focus depends on the objects the researcher is interested in. Rather than seeing a contradiction or a competition

between these scales, it would be best to reserve a suitable framework for each object and, if necessary, articulate them. If we can fully subscribe to the will of interpretative pluralism recommended by the author (of which, to be true, he does not give us here a very convincing demonstration), we find once again a profund dissensus in his approach of sociology. Not only is the macro level not the analysis framework of "lower" frameworks, in the Matrioshka dolls fashion, but this *a priori* division between the phenomena break their interactions and singularities, and impoverishes them terribly. It seems much more judicious to stay tuned to phenomena and to the actors themselves, in order to carve a made-to-measure framework as the investigation progresses[1].

It would not be fair to put the blame of the shortcuts, of the omissions, of the choice of themes found in this short book only on the author. Indeed, some editorial responsibility is engaged here in the sense that the issue of the readership is questionable. Considering the tone as well as the 'factual' contents, we wonder who would benefit from this type of reading.

Undergraduate students would find here a partial and biased introduction to something much more complex and branched out than it seems in these pages. The discrepancy between the level of generality suitable to an introduction and the concern to give empirical landmarks contributes to the perception of bias. Professionals in the field of social sciences wishing to approach themes more or less remote from their own practice would probably be battling with methodological issues, discussed elsewhere but presented here as evidences (see above). Finally, the general public wishing an accessible approach of a learned domain would not necessarily be satisfied with this approach, for here pedagogy amounts to swotting up on issues the scope of which is still to be to demonstrated. Through this booklet, the question may actually be that of popularization, of opportunities it offers and prohibits, of effectiveness, of its relevance.[2]

It must be admitted that it is difficult to locate this dense set of issues related to sciences among other lines of research in such a restricted space. Inevitably, all the author can do is pass over many important issues in silence: the political meaning of research, the relation to techniques and to their study, the parallel evolution of other issues that have shaped them (colonialism, feminism, social emancipation, education and mass knowledge...), the marginality of the links with other disciplines dealing with scientific activities (philosophy, anthropology, economics and management; ironically history is being overshadowed by this very historicist vision). Here the author's approach seems to take advantage of all these limits and to offer a highly personal reading of the sociology of science. Admittedly, on this point, he has been very successful.

References

[1] This question has been treated by sociologists of science, including:

Callon, M. (1991) Techno-economic networks and irreversibility, in: J, Law, (Ed.) *A Sociology of Monsters: Essays on Power, Technology and Domination*, Sociological Review Monograph. London, Routledge, pp. 277-303

Knorr-Cetina, K.D., Cicourel, A. (eds.) (1981) *Advances in Social Theory and Methodology. Toward an Integration of Micro and Macro-Sociologies.* Boston, Routledge & Kegan Paul, pp. 277-303.

For arguments in favour an emergentist approach of analytical frameworks see also:

Boltanski, L., Darré, Y., Schiltz, M.A. (1984) *La dénonciation,* in "Actes de la recherche en sciences sociales", 51, pp.3-40

Ragin, C.C., Becker, H.S. (1992) *What is a case? Exploring the foundations of social inquiry*. New York, Cambridge University Press

[2] For purposes of comparison, here are two other introductory books in French that address the subject in different veins:

Pestre, D. (2006) *Introduction aux Science Studies*. Paris, La Découverte

Vinck, D., (2007) *Sciences et société. Sociologie du travail scientifique*. Paris, Armand Colin.