

MacCormack, P. (2020) *The Abuman Manifesto. Activism for the End of the Anthropocene*, New York, Bloomsbury.

* * *

Silvia Cervia

Genere e scienza come costruzione sociale. Il ruolo delle istituzioni nello sviluppo della ricerca [Gender and Science as a Social Construction. The role of institutions in research development], Milano, FrancoAngeli, 2018, pp. 216

Ilenia Picardi *University of Naples Federico II*

The gender issue, a topic widely addressed in feminist science studies in previous decades, has also recently emerged in the public sphere and as a target for institutional policies in academic and research environments. One reason for this emerging attention involves the European Union's (EU's) incentives for universities to address the underrepresentation of women in research and innovation and to adopt specific gender equality plans and strategies. The book *Genere e Scienza come costruzione sociale* by Silvia Cervia retraces the process of the progressive definition of the issue as a social construct, specifying the role that feminist reflection and activism played in this process while revealing its hidden pitfalls. The theme is highly relevant because, as the author points out, gender and science constitute a paradigmatic arena for exploring the process of building scientific knowledge and its meanings.

The volume explores the vast research literature about female participation in science in the arduous attempt to reconstruct a taxonomy of concepts that, as highlighted in the analysis carried out in the initial chapters of the book, coexists in a multiplicity of interpretative perspectives. This work reconsiders different theoretical views in the sociology of science, such as Merton's normative system of science, the sociology of scientific knowledge, the empirical programme of relativism (Collins 1985; Collins and Pinch 1993), laboratory studies (Latour 1997; Knorr Cetina 1995), and the post-academic science (Ziman 2000), looking for traces of the gender issue and any points of similarity (or disagreement) with the feminist reflection on the relationship between gender and science. In this excursus, the author focuses in particular on the distinction between elements that are *external and internal* to science that contribute to gender segregation. External elements refer to forms of (self or hetero) exclusion of women deriving from the organizational functioning of science and its practices, while *internal elements* correspond to *material* (objects of investigation)

and *conceptual* (concepts, theories, knowledge) *domains* characterizing science as a cultural and gendered product (pp. 17-18). The analysis adopts the feminist epistemological perspective, shifting attention from female exclusion from science, to science as a gendered social and cultural activity, as well as the operative arm of ideologies and power.

The book focuses on the black box of the mainstream version of gender and science as an issue and tries to open it through the interpretative keys provided by the constructionist perspective.

Cervia identifies the ideological rationality that informs the dominant rhetoric of public policies and the inherent process of universalizing and normalizing the different positions developed over the years by feminist activism. This analysis approaches public research funding policies as an “ideological apparatus, aimed at constructing the truth through a process of objectification and universalization that operates through the distribution of awards (positions and grants) and punishments (lack of recognition and funding)” (p. 95, my translation). The author examines the institutional documents of the EU and governmental agencies (reports, work programmes, and *vade mecum*s) of the last twenty years, assuming the indissolubility of the format-content link as a constitutive element. The study analyses the discursive mechanisms and practices implemented by European government institutions, highlighting the justification regime adopted to legitimize the introduction and development of policies and interventions and to attribute the value of truth (*fact-making*) to the meanings produced (*sense-making*) by these same institutions.

The analysis explores the framing of the binomial construct *gender and science* and its declination in institutional and discursive practices aimed at building an incremental political-institutional legitimation of it. In this process, the narrative underlying the mainstream scientific literature is schematized as a sequence of “political seasons” (p. 98) – *fixing the women, fixing the institutions, fixing the knowledge* (aimed respectively at increasing the participation of women in science, transforming the institutions of science, and transforming scientific knowledge content) – described as the result of a natural process of osmosis between the progress of scientific knowledge about the issue and the design of dedicated policies. The thesis supported by Cervia is that this reconstruction shows a “substantial discontinuity with the feminist tradition, betraying its structural/institutional criticism” (p. 176, my translation). The analysis, proposed as part of the feminist institutionalist research program (Mergaert and Lombardo 2014), highlights the translation process of the political promotion of gender equality in standardization procedures implemented by selecting topics, objects, and perspectives recognized and legitimized as pertinent. In denouncing the normalizing effect of the narrative of European public policies, Cervia identifies a new alliance between knowledge and power, enrolling specific feminist positions in a project aimed at strengthening the claims of science to objectivity and universality. According to the author,

the evidence-based approach adopted by governmental documents led to the focusing of elements external to science (interpreted as micro and macro) to the detriment of internal ones, and the discursive practices adopted by both mainstream literature and European institutions have brought about the universalization of standpoint feminism. The perspective of standpoint feminism is therefore recruited by EU institutions in a “project capable of re-founding science as stronger and more objective overcoming the myopia of gender-blindness, and at the same time obscuring other voices, much more radical, which, shunning all universalizing discourses, highlight the knowledge/power character of the discourse of science (post-modernism) and the plural value of domination, while highlighting the artifactual character of scientific knowledge” (pp. 175-176, my translation).

The book does not adopt an STS approach properly in scrutinizing the social construction of gender and science, but the STS theoretical perspective offers a fascinating framework to read Cervia’s work.

In the last decades, in line with post-structuralist feminism that defines gender in terms of practices continuously reproduced in social interaction, STS studies have unveiled practices that obscured subjectivity as a constitutive part of scientific knowledge and theorized gender and technoscience as reciprocal modelling, investigating gender *in* technoscience and the gender of technoscience as well as gender as a product of technoscience. In Haraway’s analysis (1996), the experimental technologies that in the second half of the seventeenth century anchored the definition of the scientific method, produced the boundaries and standards to define and control what could be considered scientific knowledge and what could not. Haraway revealed the situated and sociohistorically constituted nature of this process, which claimed the establishment of the experimental method as productive of universal knowledge. Judy Wajcman’s (2010) techno-feminist approach, in which technological artefacts are both the conditioning elements and the products of gender relations, enables to consider gender relations as materialized in technoscientific practices, while gender, in turn, acquires meaning and character through its inscription and incorporation into technological devices and infrastructures.

Therefore, within the STS approach, the distinction between external and internal elements collapses, and these elements are relocated within a co-evolutionary socio-material network, being mutually co-constructed and modelled in a process of continuous redefinition. Public research funding institutions can be investigated as actors that (re)direct the techno-governance of science and community policies, and the Foucauldian conception of apparatus used by Cervia can be extended in agential realism of Karen Barad by identifying the apparatuses not as “mere observing instruments but [as] boundary-drawing practices – specific material (re)configuring of the word – which come to matter” (Barad 2007, p. 140). In this sense, they act as apparatuses operating in the construction of gender and

science as an issue in scientific institutions. From this view, change in techno-scientific governance systems is an internally heterogeneous process in which regulatory systems, technology, and society mutually constitute each other, giving rise to socio-material systems and structures.

This perspective opens up challenging lines of research in the STS field aimed at understanding the socio-material practices of construction of gendered technoscience inscribed in the implementation of European policies and at understanding innovation, science, and gender in their making.

References

- Barad, K. (2007) *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*, Durham and London, Duke University Press.
- Collins, H.M. (1985) *Changing Order. Replication and Induction in Scientific Practice*, London, Sage.
- Collins, H.M. and Pinch, T. (1993) *The Golem: what everyone needs to know about science*, Cambridge, Cambridge University Press.
- Haraway, D. (1996) *Modest witness. Feminist diffractions in science studies*, in P. Galison and D. J. Stump (eds.), *The Disunity of Science. Boundaries, Contexts, and Power*, Redwood City, Stanford University Press, pp. 428-442.
- Knorr-Cetina, K. (1995) *Laboratory studies. The cultural approach to the study of science*, in S. Jasanoff, G.E. Markle, J.C. Petersen and T. Pinch (eds.), *Handbook of Science and Technology Studies*, London, Sage, pp. 140-166.
- Latour, B. (1987) *Science in Action. How to Follow Scientists and Engineers Through Society*, Cambridge, MA, Harvard University Press.
- Mergaert, L. and Lombardo, E. (2014) *Resistance to implementing gender mainstreaming in EU research policy*, in “European Integration online Papers”, Vol. 18, Article 5.
- Wajcman, J. (2010) *Feminist theories of technology*, in “Cambridge Journal of Economics”, 34 (1), pp. 143-152.
- Ziman, J. (2000) *Real Science: What it Is and What it Means*, Cambridge, Cambridge University Press.

* * *