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BOOK REVIEW

Matteo Valleriani, Giulia Giannini, and
Enrico Giannetto, eds., *Scientific Visual
Representations in History*. Cham: Springer,
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This collective volume sustains handsomely through its pages a difficult dual task: first, it presents a range of varied cases illustrating the manifold and complex, even often exceedingly subtle, questions raised by the use of images in science. Second, it manages to sustain, almost as an ebb and flow, a degree of epistemological reflection based on the particular studies. There are valuable cross-references between chapters, resulting in a powerful total effect on the reader, with the running question, emerging here and there but always implicit, of whether knowledge derives solely from visual perception. In case there were any doubts about the relevance of this theme, we should remember that this is precisely the opening discussion of Aristotle's *Metaphysics*: how all humans are drawn towards knowing, especially knowing through the eyes.

I am not entirely convinced by the three-part organisation of the essays under the headings corresponding to three “epistemic categories”: Transmission, Transformation, and Exploration; but it may just be that a longer preface would have been needed to elaborate on such an

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arrangement. In any case, it does serve its practical purpose, and as is clearly stated, all chapters contribute to the understanding of the three categories. Including the chapters on art history (Ch. 6 mostly) and anthropology (Ch. 12) that pave the way for a rapprochement between history of ideas and history of science (see John Tresch, “Cosmologies Materialized: History of Science and History of Ideas,” in *Rethinking Modern European Intellectual History*, Oxford University Press, 2014, 153-72).

Chapter 2 introduces a particularly important historical formulation of the central theme, one that reoccurs in later chapters, namely the meaning of Greek *theoria* (Latin *contemplatio*), its relation to what we call a theory, and its semantic shift towards the meaning it came to have in Peurbach's *Theorica*. Chapter 3 is an engaging reflection on the epistemological aspects of Hooke's *Micrographia*, including its recurring appeal to the theological argument of “design,” and its relation to Hooke's depictions. Chapter 4 presents a fascinating exploration of the potential of digital corpus study, using cutting-edge technologies to analyse and compare late medieval cosmographical images. Chapter 5, based on Hero of Alexandria's technical diagrams, considers instruments and mechanisms as embodiments of ideas, showing more palpably that a “diagram is not an optional accessory to make the text more visually enticing, but is epistemologically essential” (p. 148).

Chapter 8 seems out of context in this volume. It is an unfortunate jumble of philosophical jargon that amounts to a rambling collection of non sequiturs and platitudes. One should only note the vague, equivocal use throughout of the terms “thought” and “thinking,” perhaps imported from Calogero (*Lezioni di Filosofia*, 1960) as would-be translations from the Greek.

Chapters 9 to 11 raise or revisit interesting points through the study of contemporary technologies and subjects. They deal with photography, magnetic resonance imaging, and digital (not “numerical”) reconstruction of astronomical objects. The question of “mechanical objectivity” in scientific image-making comes to the fore again, while there is an interesting juxtaposition between the consideration of MRI and of galactic studies—to show how very similar epistemic questions can be found at the closest possible human range, i.e., the tissues of the body, and the intergalactic spaces. Finally, Chapter 12, on ethnoscience in the Australian Outback, deals with cartography, or rather land knowledge. This seems particularly appropriate for a closing and recapitulation, since it opens a door towards the kind of fundamental epistemic otherness which needs to be tackled head-on if we are to make sense of pre-modern science at all. Even more enticingly, it describes participatory projects to foster the emergence of a common and shared “vision” between traditional and modern knowledge, “a techno-visual hybrid language.”

What I find lacking in the volume as a whole is something promised in the Preface and sadly left unfulfilled: “We have avoided a chronological, geographical, or disciplinary focus” (p.

v). The intention is excellent, and as for the various disciplines, quite accomplished, but this volume, for all its merits, ended up being a decidedly eurocentric and presentist volume. As for Eurocentrism: of all twelve chapters, only one (and a few passages in chapters 2 and 4) deals with a non-European tradition of knowledge. Three chapters, a quarter of the book, are devoted to British-related case studies. They are excellent chapters, but in our days, when globalisation is no longer a theory, but a daily reality, we historians of science can no longer afford to publish this kind of collection without alerting the reader. Now, this is a relatively small matter. The second point, presentism, is more important theoretically.

Of all the chapters in the book, roughly speaking, only two (chapters 5 and 12) deal with cases before the sixteenth century. One third of the book is dedicated to the nineteenth and twentieth centuries, and not one chapter is on the Middle Ages, where there was such a rich tradition of science illustrations (see recent works by scholars like: Jeffrey F. Hamburger, David J. Roxburgh, and Linda Safran, eds., *The Diagram as Paradigm: Cross-Cultural Approaches* [Byzantine Symposia and Colloquia, 2022]; Christoph H. Lüthy, et al., eds., *Image, Imagination, and Cognition: Medieval and Early Modern Theory and Practice* [Brill, 2018]; Jan Wöpking, *Raum und Wissen. Elemente einer Theorie epistemischen Diagrammgebrauchs* [De Gruyter, 2016]). This absence of the medieval views might partly explain the little attention given (Ch. 5 excepted) to aspects of the problem which were crucial everywhere in premodern thought (as shown by Ch. 12 among the Aborigines). These aspects are, first, the concept of a reality to which the primary meaning of *theoria* corresponds (and for which micro- or tele-scopes are of no use whatsoever); second, the direct non-discursive correspondence between that reality and the forms perceived through the senses. This all has to do with “aesthetics” of the diagrams, with the role of the faculty called in Latin *imaginatio*, and the cognitive process called *informatio*.

Briefly put, this book wishes to be, by its own defining purpose, about cosmology and metaphysics, because that is where the fundamental discussion is leading, but perhaps the tilt towards modern science makes it remain still too much on the side of cosmography and physics. This volume is, however, presented as the first step of a larger research project. It is definitely a solid first step, and we shall look forward to the next instalments.