

**Seen/Unseen:****Art, science and intuition from Leonardo to the Hubble telescope.****Martin Kemp****Oxford University Press: Oxford 2006. 352 pages.**

Visualization in science, following the writings of Michael Lynch and Bruno Latour (e.g., Latour, 1990), is increasingly acknowledged as an important topic in STS. It is representation in scientific practice, in turn, that most authors address. Michael Lynch and Steve Woolgar (1990) argued, notably, for images as active agents in the construction of facts. This “ethnographic” approach is often seen as intrinsic to an STS idiom of sociologically-inclined analysis. Thinking about images in ethnographic terms, however, might be seen to be in place well before the STS efforts, some of the earliest writings on the visual in an ethnographic light being Thomas Kuhn’s writings in the 1960s. It was “historiographic” rather than “aesthetic” practice that was the object of Kuhn’s ethnography while making comparisons between art and science.

Consistently in the *Essential Tension*, Kuhn’s references to art become expressed as historiographically-mediated insights that draw, in particular, on writings by art historians such as Erwin Panofsky and Ernst Gombrich (Kuhn, 1977: 105-126). Quite contrary to this, the current STS research approaches images as historiographically transparent objects. Writings on visualization in science and art from an “art historical perspective” seem to be outside the scope and relevance of STS writing on

imagery. The lack of attention to Martin Kemp’s book *Seen/Unseen* is an example of this tendency.

Kemp’s book is divided into four parts and ten chapters grouped thematically and chronologically into discussions that range from Renaissance optical themes to problems of perception and representation by machines in modern imagery. Styles and problems of seeing shared by scientists and artists is an underlying concern for all of Kemp’s discussions. Kemp explores a wealth of materials, such as different styles of perspective and concepts of proportion, comparisons between art and science in the light of the theme of analogy, seeing patterns in the application of geometry from Leonardo to Goethe, techniques of representation and the camera before photography, the rhetoric of objectivity in anthropological photography, as well as attempts to depict the “un-seeable” such as in the case of X-Rays and other modern imagery.

Thus *Seen/Unseen* is typical of Kemp’s style of art history or “history of the visual” as he describes it, rich in comparisons between art and science in given historical and social contexts (see Kemp, 2000). By means of comparisons, he attempts to retrace and explore the practices that artists and scientists adopt in arriving at aesthetically similar results that are called as “structural intuitions”.

In *Seen/Unseen*, there are a number of such comparisons referring to Kuhn's earlier writings of the 1960s that drew, like Kemp does, on the idea of ethnographic analogy. Even though representation in Kemp's analysis expresses a historical fact, the facts of the images that he discusses are social things or objects that are mediated and constructed by practices and material technologies. Kemp's "visualization", thus, emerges as a phenomenon mediated by the agency of material practices and techniques that are socially and historically contingent. In *Seen/Unseen*, Kemp looks, for example, at the role, parallel uses and appropriation of imaging techniques, addressing a number of material technologies such as Leonardo's early modern models and machines on paper, optical and single lens microscopes starting from Hooke's lenses and ending with the Hubble telescope.

Kemp's ethnographic sensibility, a thick description of images and practices, is historiographically-mediated and similar to Kuhn's earlier approach to the visual. In the book, Kemp, for example, discusses his own approach to visualization in relation to the impact of biologist's C.H. Waddington's book *Behind Appearance* published in 1969 (p. 211). On one hand, Kemp's historiographically-mediated ethnography of the visual links his work to Kuhn's earlier endeavours. On the other hand, Kemp's referencing of Waddington's work stands as an argument for a classification of Kemp's work in a trajectory of writing concerned also with the public understanding of science. Waddington's book, in the context of its reception, may be seen to have expressed both the impact of Kuhn's "cultural history" and an emergent genre of writing described as public understanding of science. Above

all, Kemp's *Seen/Unseen* is the work of an acute observer in the business of looking at and retrieving, epistemological, social and aesthetic detail in art and science, as matters of historical fact.

Kemp defends materialism in the analysis of visualization. This becomes clear in Kemp's distinction between "cultural construction" and "cultural realization". Structural intuitions, he asserts, are the products of both "historical imperatives" and "cultural attuning". At the same time, they require, "basic mechanisms and visual potentialities" which are not, in his view, "culturally constructed" (p. 324). Here Kemp, simply states the obvious. His acknowledgment of a "biological" apparatus that hosts and becomes entangled with tacit knowledge and historical contingency is more of a materialist than a realist plea for the reading of visual evidence across art and science.

Kemp's work is an inspiring, thoughtful and comprehensive analysis of artists as ethnographers of modern science and scientists as artists in a long duration of time that has given rise to some of the most iconic moments and images of modern and early modern science from the Renaissance to the present day. Anyone who is interested in visualization in science and the ways in which images and styles of representing in science intersect with the agency of artists from a historical and ethnographic perspective should read *Seen/Unseen* that is, in itself, an experiment in historiography and interdisciplinary method as far as the study of images is concerned today.

## References

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