

Agency in image production

The Technical Image: A History of Styles in Scientific Imagery, eds. Horst Bredekamp, Vera Dünkel and Birgit Schneider (The University of Chicago Press in association with the Bard Graduate Center, New York City, 2015), 208 pp.

The *Technical Image* is a translation and continuation of the German original *Das Technische Bild*, aiming to bring an extensive corpus of studies on scientific and technical images to a new audience. An initial project in 2000 has grown into a new discipline, through collaborations and research foraying from art-historical discourse into technical and cultural realms, and dealing with the cultural construction of images in the sciences. The work is presented here as a handbook of methodology, a series of detailed case studies, a selected glossary, and an appended bibliography for this new discipline.

The introduction to the book by the editors is an introduction to a research programme for a 'Cultural Technology', setting out their stall and summing up their work. Three articles make a section called 'Methods', high-level discussions of art-historical perspectives on scientific imagery, technical imagery and natural-scientific pictures. Ten chapters are case studies, each presenting an enquiry in depth. Between the case-study chapters are substantial interludes performing as glossary or encyclopaedia entries, each reviewing the history and literature of a concept carefully chosen to illustrate investigative themes, and built on example images. These short pieces are perfect texts for the graphically-minded – more picture than word, with expansive captions and concise, essential content distilled from vast reviews.

When Charles Darwin ordered his finches by variation in beak form, he was working with images

already in their fourth generation of transmission from specimens drawn after being shot on the Galápagos islands. When Marx Ziegler, a master weaver from the city of Ulm published graphical codes for setting up looms, he at once captured image programming for the first time, and released the knowledge they contained from the closed shops of the guilds. Wilhelm Conrad Röntgen gave credibility to the process of creating an image with newly-discovered X-rays by inviting a person of very good standing from the audience to put his hand in the apparatus. In each of these and so many other cases, we see active agency in the process turning mechanical transformation of graphical substance into a vehicle for performance of concepts. Elements are selected, oriented, associated, nested, sequenced, packaged, at each step in a mix of influences from prior knowledge, theory, understandings, intentions. The image is a product of process rather than of capture.

The project *Das Technische Bild*, and the community of discourse it has grown into, represented by *The Technical Image*, emerges from art history, drawing thicker pictures, layered with material cultures, cultural prospections, and multiple hermeneutics of image presentation. Each author applies their fully-informed array of tools to open up new arguments and address anomalies, to expose and develop lower-level observations, so the whole can be understood



in higher resolution. It is an immensely satisfying exploration of a whole lot of work, condensed and purified so that it is rich, accurate, and thoroughly convincing.

There are three editors, and chapters have their own authors. However the glossary entries (two-page spreads, and worthy of being stand-alone works) have no by-lines, and the translator is not identified up front. Individuals are named in the acknowledgements and clearly represent extensive student labouring, along with the lead translator Gerrit Jackson. Here also is identified the role of the Bard Graduate Center in New York City in having initiated the English publication, in the persons of Daniel Lee and Peter N. Miller, the latter having contributed the highly readable Foreword. The Bard Graduate Center is thereby also introduced to new audiences, who will delight in its archives.

The illustrations in this volume are up to the task, which is a great relief. They are sharp enough to capture the example of moiré vibration arising from interference between half-tone printing and scanner pixelation. They have supportive, detailed captions giving image provenances, and are suitably positioned to integrate well with the text. Most satisfyingly, the mounts, borders, edges, frames and glosses are all shown, bringing the materiality of pictures to the printed page. No cropped or dropped-in cut-outs here, no green-screening, dodge-and-burn, no blending and overlays. Actually, these are probably all done, but done where they work. The pictures are presented as objects, artefacts, things with a physical extent and construction, that reside somewhere in a box or a room.

The page layout works really well. Wide margins are filled with references and notes, keeping out of the centre view, but being ready to serve when called on. Credit is given for design, copy editing and proof-reading, all highly deserved. I learned a new word, *adumbrate*, a shadowy foreshadowing, and also found an error, where 'Denmark/Norway' is in a caption, but 'Germany' is on the image (one from William Playfair, familiar to many in the work of Edward R Tufte; the Denmark/Norway image would have worked better, so perhaps it was what was originally intended).

The referencing is meticulous and exhaustive, but also has run wild, with marginal references in the thirteen chapters, verbose image provenances in the captions, local terminal reference lists in the

interspersed glossary entries, and a 'thematically arranged bibliographical appendix ... adapted for an English-speaking audience'. Each of these functions for its intended purpose, but they are confusingly dispersed. However, the book as a whole is perfect for converting to a custom digital platform. Content is already highly decomposed and structured, while the images will be welcomed in zoomable higher resolution. Complexity of referencing on paper will become simplicity in the medium of hyperlinked metatext. Extending the editors' wish to make this work available to a wider audience, it could have the chance to become a dynamic corpus, capable of continued development. Or, as it would itself best understand, a document of its time, capable of being understood as a product of construction through interaction of materials with minds in an explorable cultural context.

By translation into English, *The Technical Image* achieves its aim of opening a mature field to a wider audience. Its deeply informed scholarship, with rigorous source attribution, and argument paralleling in graphical and textual media, is apparent in every individual bite. It is a good buy in hardcopy – pleasant to handle, a treasure to view, and an inspiration to read. ■

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