The following is a pre-print of a book review that has been published as:


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**Imagery in the 21st Century.**


Readers who are surprised to find a volume entitled *Imagery in the 21st Century* reviewed in this journal are reminded of the working definition of “pragmatics” that Dawn Archer and Peter Grundy settle for: “the study of meaning in context” (2012, p. 2). Given the maturity and theoretical sophistication of “linguistics” as a scholarly discipline, its practitioners may be excused for believing that pragmatics is a subdiscipline of linguistics, but of course pragmatics is the encompassing term. And in a world where multimodality (particularly the variety straddling language and visuals) inexorably gains ground, developments in visual studies should be of interest to linguists.

That visual studies, or image science, is a discipline still very much in its infancy becomes clear from the variety of genres and approaches accommodated in the volume under review. The main editor, Oliver Grau, is an art historian, and since art history has long been the discipline *par excellence* where images are studied, it stands to reason that he has a penchant toward research focusing on art. But the editors advisedly include other voices, too. The main reason for compiling the volume, after all, is the assumed need for “more media and image competence” (p. 10).

Despite the book’s ambitious title, it is nonetheless fairly selective in the types of images discussed. The chapters do not, or only fleetingly,
discuss for instance advertising, book illustrations, comics, film, logos, pictograms, cave painting, maps, and diagrams, while each of these present their own genre-specific challenges to the analyst. However, such eclecticism is symptomatic of any young discipline. I will take the liberty of being similarly selective in this review and restrict myself to discussing what I find most interesting, promising, and comprehensible (for titles of all 20 chapters, see https://library.lehigh.edu/asa2.0/Record/1171711/TOC).

After some reflections on the materiality of "current screens" (involving issues of toxicness, energy, and the costliness of crucial materials such as selenium and germanium), Sean Cubitt points out how human beings are increasingly, and helplessly, subject to the "protocols" that software developers have implemented in their programmes. "The very same protocols that allow us to disport ourselves in cyberspace also constrain us to act according to the rule-set that underpins it" (p. 29). The author gives examples of how reduced colour gamuts in software programmes provide impoverished colour spectra compared to both human vision and, say, traditional oil painting. Similarly, YouTube technology cannot deal well with (quick) movement, which requires much more bandwidth than static images, and prospective uploaders are advised to realize this. As a consequence, the software steers the type of content uploaded, favouring talking heads over fast action. Cubitt warns that we thus run the risk to be reduced to unwitting "average men" in our consumption of screens, pre-conditioned by these screens’ underlying software parameters.

Dolores and David Feinman, drawing on experiences from their own medical practice, sketch some dimensions of the ubiquitous use of biomedical images and the concomitant need for visual literacy in this field. Although the layman may believe that these are "objective" images, they are no different from more artistic ones in highlighting some aspects of whatever it is that is depicted and hiding others. Moreover, imagemakers are inevitably guided by historical and cultural conventions co-
determining what such depictions are supposed to look like. Consequently, the producers of the image face both technical and ethical questions. For whom do they make the image? For the medical expert, who needs to decide on the right treatment of the disease supposedly depicted? For the medical student, who encounters it in a textbook? For the patient? Or for a flashy PR PowerPoint presenter at a conference hosting prospective investors? The authors advocate the development of an optimally shared “visual language,” which requires the expertise of both medical specialists and artists.

In a thought-provoking chapter James Elkin, a veteran in image studies, points out that whereas art history is traditionally the scholarly discipline credited with expertise in the analysis of images, many more visuals and graphics, in fact, are used in the sciences. But art historians don’t have anything insightful to say about these latter. Elkin raises the issue how scientific images can be useless or misleading, or serve promotional purposes rather than provide evidence of something. Another pertinent point he addresses is that many pictures are complete artifacts in that they do not represent or imitate anything in reality (however defined), for instance because they visually aggregate information from many different sources (such as graphs and diagrams). Elkin concludes by distinguishing several “families of images” and recommends “a required, university-wide course that would introduce students to many different faculties and departments through their use of images” (p. 168). Only in this way can academia do justice to the idea that we live in a visual culture. An added bonus is that the sustained study of images constitutes an excellent way to trigger scholarly debate across the various disciplines.

Several artists and art historians contribute their views. Christa Sommerer and Laurent Mignonneau report about their own and other artists’ interactive installations, discussing intriguing case studies that “hybridize and expand the areas of participatory art to interactive architecture, interactive fashion, communication, and design” (p. 206). Peter Weibl, in “Web 2.0 and the Museum,” laments how traditional
museums are Arks of Noah, preserving and exhibiting only the chosen few “masterpieces” from an infinitely larger art production and enthusiastically argues that, in the digital age, in principle every single piece can be added to the virtual store of art works. He sees it as the duty of museums to facilitate the recording and exhibiting of such art; if not, he predicts, art museums will become obsolete.

Tim Otto Roth and Andreas Deutsch discuss the form of pictorial creativity spawned by “cellular automata,” in which the implementation of an often very simple rule can lead to unpredictable, beautiful results (their example is the wave in a football stadium: “stand up if your right neighbour is standing; sit down if he is sitting”). Cellular automata are eminently computer-programmable, and can help simulate the behaviour of complex systems. These systems develop their own unforeseen patterns once the initial rule has been activated; and it is their visualisability that enables us to grasp the self-generating, self-organizing regularities.

One dimension in which linguistics has a decisive advantage over visual studies is that computer software can automatically search for patterns in vast corpora. This is because language, as opposed to visuals (pace Kress and Van Leeuwen, 2006; see Forceville, 1999) has a more or less stable vocabulary and grammar, and thus has a searchable “form” (the computer, after all, recognizes form, not content). But inasmuch as visual form can be defined on the basis of quantifiable parameters, there are exciting opportunities for data visualization, as Lev Manovich and Jeremy Douglass demonstrate. Once visual data are digitized, parameters such as colours, their saturation, and grayscales, can be quantified and visualized. In one case study, on the shift from 19th century realism to modernist art, this technique allows the authors to show that the change in style accelerated after 1870, and even more after 1905. Although the analysis of film will still need to be done manually, computer programmes can help: if researchers upload film analyses using well-defined, objectively attestable categories (shot length, camera movements,
A reliable database is gradually built up, as the authors mention with reference to Yuri Tsivian’s user-friendly programme (http://cinemetrics.lv). Such tools, Manovich and Douglass point out, can help model cultural change in a verifiable/falsifiable manner. In another chapter Martin Warnke introduces a similar tool, Hyperimage (http://www.hyperimage.eu/), to enable art historians and other visual studies scholars to find (details of) images and their genealogies.

Oliver Grau sees art history, due to its long tradition in charting and analysing paintings and other artistic expression, as the best candidate to be the founding discipline for “image science,” which in his view must comprise all types of images. For this new science he formulates three preconditions: “(1) definition of the object; (2) the building of an image archive; and (3) familiarity with a large quantity of images” (p. 355). I would explicitly add a fourth one, suggested later by Grau himself: “tools for the analysis of culturally relevant data, based on open networked systems” (p. 362) – an issue addressed in various other chapters in the volume. Moreover, a healthy development of the discipline requires that a profound knowledge of art and its history is complemented by insights from science and by technological skills. As the greatest challenge Grau sees the difficulty of bringing together the numerous, often very innovative, small-scale initiatives under far bigger umbrella projects – very much as happens in the sciences. A more specific concern of his is that the “media art” of the past 30 years runs the risk of simply disappearing because there is no money to ensure enduring access to this type of art by “migrating” it to new software systems.

Let me wind up by summing up what strike me as important topics and trends that pervade the volume. The visual in 21st century communication and argumentation proliferates in an enormous tempo, not least thanks to the digital revolution. This makes the development of an “image science” highly urgent. Art historians and theoretically interested artists can, and should, play a leading role in the new discipline, but they
need to collaborate with scientists and with experts in digital technology. This is necessary not only in the service of creating global digital archives, but also because the vast majority of images are non-artistic ones: advertisements, newspaper photographs, cartoons, illustrations in medical textbooks, etc. A healthy image science requires supra-national archiving initiatives as well as the creation and refinement of electronic, preferably open-source tools for analysis. While this requires the commitment of scholars to tag, categorize, and analyse images as intersubjectively as possible, digitization also favours true interactivity. The old Surrealist and Dada ideal that everybody is an artist becomes increasingly attainable (although one may regret as much as applaud this), and in digital museum installations the art-lover often is invited to actively co-create, turning into a “prosumer.” At the same time, we need to remind ourselves that the medium continues to be the message. It may seem that in the digital age we have infinite freedom accessing, co-shaping, and transforming visuals, but we are necessarily constrained by the choices made by the software-designers of programs, archives, and games. Finally, visuals increasingly shift from being pictorial copies of things in reality toward constituting simulations of data.

*Imagery in the 21st Century* gives much food for thought and provides rich practical advice on how to make progress in making image science a serious discipline. If I have one reservation, it is that, probably due to the art-historian origins of the volume, there is hardly any attention for the fact that the vast majority of images do not appear on their own, but are typically accompanied by information in other modalities – specifically language. Whereas in art musea we may decide to ignore the title tag next to a painting, pictures in other genres must be interpreted in combination with language (and/or other modalities, such as music and sound). That is, ultimately, the new science should not be “image science” but “multimodality science” (see Forceville, 2011). If this is right, myriad opportunities await linguists and literature scholars to enter the field: on the one hand, expertise in the analysis of exclusively
monomodal verbal texts can provide avenues for methods how to research “viscourse” (the term is credited to Karin Knorr Cetina, p. 274); on the other hand, images seldom appear alone, and systematic examination of how their meaning is narrowed down, or complemented by, language (Barthes, 1986) is an honourable task for adventurous pragmatists in language and literature.

References

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