



Book review

Review of the Psychology of Graphic Images  
M. Massironi; Erlbaum, 2002

Action Editor: Stefan Wermter

G. Kurian

School of Management & Social Sciences, TIET, Patiala 147 004, India

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The hegemony of positivist thinking has shown some signs of decline in the psychological sciences in recent times. Lakoff's (1986) critique of objectivist categories and Edelman's (1992) emphatic appraisal of embodied mind are some of the outstanding contributions echoing this sentiment in the last decade among several others. Since early seventies when the study of mental imagery made a resounding return in the mainstream cognitive psychology it became apparent that the traditional mental categories are not going to be abandoned altogether after all. Mental imagery as a respectable domain of investigation continues to flourish despite the long-standing controversies surrounding it. Now it is the turn of the non-verbal or pictorial aspects of text that is coming to the fore to hold a place along with aspects of language. Manfredo Massironi, who is both an artist and a practicing psychologist has made a significant attempt to develop a taxonomy of the graphic forms used in communication and representation along with an analysis to delineate the significant perceptual principles underlying varied forms of graphics. The author attempts to capture the flavor of graphics from European cave art to modern day graphics.

For a long time drawings, paintings, sketches and even photographs were considered an *aid* to the main

text. They are still considered as illustrations, literally. However, Massironi's 'The psychology of graphic images' is an open invitation to study graphic images on its own terms and not as an appendage to the word. This book presents a comprehensive taxonomy of graphic images – both representational and non-representational, art and non-art. For a student of perceptual psychology nothing could be a better offering than to study and understand the principles underlying the construction of the very stimulus material he or she uses in the experimental laboratory. The exercises given in the text are really instructive in this sense.

The schema presented herein has an evolutionary flavor without losing sight of its functional significance.

Now it is widely accepted that the *Homo sapiens* appeared in Europe about 60,000 years after branching off from the African origins about 40,000 BCE. Available evidence attest to the existence of Paleolithic cave art at least in the case of European cave art as old as 30,000 years before present (Valladas et al., 2001). Early signs were made in the form of etchings, carvings or marks, using pigments like charcoal and other material on rocks, sticks and other available panels. Even in these earliest beginnings one can observe the remarkable distinction

between representational graphics and abstract representations. Both naturalistic and abstract variants are found in abundance in primitive art. Early man's attempt at cognitive economy yet seeking realism in representational depictions can be gleaned in these.

Unlike alphabets, words, and sentences, graphic images are concrete in the sense that they have a "here and now" orientation. Drawings, etchings and carvings are more natural in that even in the development of representational forms in the child drawings pre-date writing or any other form of symbolic communication. Graphic forms are more organic in that sense. Almost all known cultures have some form of graphic traditions – magic symbols to highly articulated scientific notations. It appears that graphic images are as natural to mankind as locomotion. See for instance the tendency to indulge in doodles and other past time scribbles irrespective of cultural sophistication and age. Graphic images unlike spoken language are more physically constrained and hence richly articulate the cognitive givens of the agent. From the functional point of view of communication, graphic images are both conserving and yet flexible. They can be used to infer, store, transform and retrieve information. In fact the earliest mnemonic aids could have been graphic images. From the point of view of a historiographer of graphic productions the wiring diagram of present day electronics and managerial or organizational charts which are the hallmarks of modernity are no less esoteric and mythical than the magical signs and mandala of an earlier era. The worldview espoused by each may be qualitatively different. But only on the basis of some distinct worldview one could say for sure that one kind of representation is more proximate to truth than the other.

Understanding of the principles of perceptual invariants is relevant to fathom the crux of informational encapsulation in graphics. Invariance and variation work together to produce novel forms while stabilizing the world us in predictable ways. Like concepts they are dynamic yet like language (words) graphics help to stabilize the change. The author draws on J.J. Gibson's pioneering efforts at formulating a psychology of ecological perception in which Gibson emphasized the importance of the optic flow (which is dynamic entity constantly in

flux, changing with the point of view of the perceiver and the ambience) and the principle of invariance. Invariants he took as idealizations derived from the objects and scenes. Invariants are essentially formless, abstract characteristics. These are domain independent and are like mathematical abstractions. In this sense the invariants share a lot with the grammatical deep structure, which the linguist Noam Chomsky posited to underlie all natural languages. Massironi then uses the disadvantages of pictures as listed by Gibson to suggest the informational richness and the cognitive complexity underlying graphic images in contrast to language.

There is an extensive discussion on the scenic aspects of graphic images, which the author compares to the verbal context in language behavior. Scenes are images containing elements that occur in specific relation to each other thus creating a figural unity. Each local element contributes to the meaning and figural form of the scene while the global properties of the entire scene contributes to the meaning and characteristics of each of the local components. For example, in the case of scenes a single line segment – as a constitutive element – can be used to represent several aspects of reality. However, the totality of meaning exerted by the whole finds its way into the characteristic of each individual element. That is, there is a two-way relation between the constituents and the total scene. In this way the whole scene can be considered as providing context within which the constituents express themselves. Yet, some elements contribute more information than others. The author takes great interest in narrating the adequacy and importance of the context in the perception of individual elements.

Like psycholinguists, the author of this text emphasizes the need to ground the study of perception in the organic realm. The progress of natural sciences like chemistry and physics could be attributed to their amenability to abstract away from variation. Perceptual psychologists cannot afford to follow the same path. It is precisely the variation that perceptual entities entail for the observer that is the subject matter here. That is "In the study of perception, the starting point is not just a piece of the world, but a piece of the world plus an observer who looks at it" (Massironi, 2002, p. 242).

## References

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