between one letterform and another. Having attained that awareness, there is no turning back, with the result that smart-set type appears—to a type taster—as full or smooth or dry as does a bouquet of wine to a wine taster. Thereafter, one has little choice but to fall in love with styles of type, to dote on one’s bevy of favorite fonts, and to resort to owning books like these. _Design Connoisseur_ offers page after page of obscure typographic remnants (long forgotten typefaces, ornaments, letterheads and logos), culled from antique specimen sheets, type books and trade magazines from 1896 through 1936. While it contains almost no text, it is a dazzling “museum without walls” of otherwise unattainable shards from the archaeology of typography. _Texts on Type_ is the opposite, in the sense that it provides only a handful of visual examples, consisting instead of 50 essays by historic and contemporary designers, critics and teachers (among them Frederic Goudy, Ruari McLean, Emil Ruder, Jessica Helfand, Herbert Bayer and Beatrice Warde), who address type-related topics that (regrettably) may only be of interest to other designers, design historians and typophiles. As noted in a passage from W.A. Dwiggins in the latter book’s foreword, letterforms “are so completely blended with the stream of written thought” that “only by an effort of attention does the layman discover that they exist at all.”

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**GEORGE NELSON: THE DESIGN OF MODERN DESIGN**


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George Nelson (1908–1986) is nearly always listed as an important American industrial designer, but it may be more factual to think of him as a writer and design director. While at Herman Miller, Inc., from 1946 to 1965, he was instrumental in the production and distribution of furniture by Charles and Ray Eames. At the same time, as principal of his own New York firm, he oversaw the development of furniture, office storage systems and exhibitions for General Electric, Chrysler Corporation, Steelcase and Olivetti. The two most famous products with which his name is commonly linked, the 1950 Ball clock (described here as a cross between the starburst and an asterisk) and the 1957 Marshmallow sofa (which failed, as someone at Miller explained, because “not too many people wanted to choose which cheek to place on which marshmallow”), may in truth have been developed by Irving Harper, a gifted staff designer. Based on substantial, thorough research, this illustrated biography of Nelson is nevertheless entertaining and highly readable, in part because the author’s text is clearly and fluently written, but also because of the numerous quotes from Nelson’s writings, along with comments by his friends, employees and clients. Included in the appendices are a chronology of Nelson’s work, a biographical chronology, and a major bibliography.

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**THE POSTDIGITAL MEMBRANE: IMAGINATION, TECHNOLOGY AND DESIRE**


Reviewed by Robert Mitchell. E-mail: <lrmitchell@med.wayne.edu>.

During Word War II German scientists found themselves in a bit of a predicament when they captured electronic equipment from the British. Some of the equipment they captured had been planted by British intelligence and its complex circuitry did not actually do anything. However, since they did not know which was which, they had to examine everything rather carefully. The Postdigital Membrane poses some similar difficulties for the reader. For example, the authors posit an analogy between the cellular biological membrane and a metaphorical membrane, which like its biological counterpart gives rise to complex phenomena. Such an analogy is sustainable, were one to compare the entropic changes within a living cell and within a living city. In both cases, to use Schrödinger’s view, cell and city maintain themselves by sucking order from their environment.

Although the book has references both to Schrödinger and to entropy, such a straightforward analogy is never made and indeed much of the book evokes the surrealism of _Last Year in Marienbad_ combined with the dialogue of _My Dinner with Andre_. Fostering this latter image is the imaginary empty seat for the discursive reader at the table in the café where the authors had their discussions.

As the title suggests, the book is rich in metaphor, especially of the mixed kind that one was encouraged to avoid by English teachers, who liked to nip that kind of thing in the bud, should one happen to float past. The authors argue that “the intellectual restrictions of the digital paradigm are now becoming unavoidable, not least since it insists on the reduction of continuous reality into discrete binary units.” However, according to quantum theory, referred to elsewhere in the book in the context of the now resolved entangled-photon controversy (and, yes, Einstein was wrong), matter at the subatomic level matter is not continuous nor is even time continuous when one gets down to very small intervals. Reality is at a fundamental level quite lumpy. If one objects that the digitization of information is a distortion of continuous reality, then why not object also to the lack of continuity of moving images projected at 18 frames per second?

Besides, the binary restrictions alluded to are bits of a red herring, as the argument ignores the exponential terms in the equation. If one imagines one box where 0 stands for white and 1 for black, one box could specify only black or white. With eight boxes there are $2^8 = 256$ combinations that could specify 254 intermediate shades of grey. With 32 boxes there would be 232 or over 4 million shades of grey, so many that the human eye would be unable to distinguish between most of them. Indeed much of what we know of the movement of cellular membranes and organelles inside living cells in real time relies on video-enhanced contrast microscopy to make exactly such distinctions. The technique uses special video cameras that can detect these minute differences in contrast as well as computers to digitally refine the images and make them visible to our less discriminating senses. Thus, rather than restricting our perceptions, digital reality has expanded them by opening up new realms to our senses and to our imagination.
The book’s subtitle, “Imagination, Technology and Desire,” is based on the notion that imagination begets human desire that begets technology, which in a recursive fashion begets further desire. Recursion is an interesting topic, one that can truly be said to be of mythic proportions. Recursion was explored rather thoroughly by Douglas Hofstadter in his work on Gödel, Escher and Bach. While the works of the three disparate artists discussed by Hofstadter can be viewed as intrinsically recursive, the three strands of *The Postdigital Membrane* are not. They had recursion thrust upon them and doubtless a Buddhist would point to the eight-fold path as the solution to this recursive bane of imagination, desire and technology.

Recursion also occurs in metaphor in the story of Kekulé’s dream of the structure of benzene, recounted on page 78. Friedrich August Kekulé von Stradonitz (here misidentified as Friedrich von Kekulé) correctly deduced the cyclic structure of the benzene molecule in an astonishing flash of intuition. He later recounted his second dream experience:

I turned my chair to the fire [after having worked on the problem for some time] and dozed. Again the atoms were gamboling before my eyes. This time the smaller groups kept modestly to the background. My mental eye, rendered more acute by repeated vision of this kind, could not distinguish larger structures, of manifold conformation; long rows, sometimes more closely fitted together; all twining and twisting in snake-like motion.

But look! What was that? One of the snakes had seized hold of its own tail, and the form whirled mockingly before my eyes. As if by a flash of lightning I awoke.

Kekulé had dreamed of a powerful alchemical symbol, the oroboros, “the serpent rejoicing in itself,” as Jung has described it. Far from Kekulé’s model being flayed, as the authors here assert, it was a remarkably accurate insight, especially for the nineteenth century, when chemists were not even in agreement whether molecules had shapes at all. By contrast, the discovery of the double helix by Watson and Crick had more to do with the X-ray data of Franklin and Wilkins than with the metaphor of the double helix. Kekulé’s vision, recounted time and time again for over 150 years, has acquired the status of a powerful meme. To say that these developments rely on “the contingency of models that are based on our ability to recognize what we think we have discovered” is by comparison a pallid statement.

And what to make of the oblique hints at vitalism in cellular metabolism? A considerable amount is known both on the general principles of the energetic processes in cells, as well as on specific mechanisms (witness the recent Nobel prizes awarded in chemistry for the discovery that millions of little turbine motors are whirring away inside all of us). To deal with the roles of entropy in the first regard would be beyond the scope of this review, apart from commenting that the illustration for “Humans tend toward resistance to entropy” showing an indolent fellow carried in a litter by two porters is of no help and appears to equate entropy directly with energy. However, in metaphorical terms, the enigmatic creature Entropy only manifests herself as Energy after transformation by union with the fiery Temperature. (the mystic union of Sol and Luna?!) Curiously in most popular writings Entropy’s energetic sibling, Exalphy, is generally ignored. Fortunately both entities exist in the world of science rather than of the gods, so no harm will be wrought by this slight.

The criticism that Dawkins has underplayed the importance of energy in his self-replicating gene theory is quite reasonable, a membrane of some sort being essential from basic entropic considerations to permit life to evolve and prosper. Unfortunately, the authors are vague as to what kind of energy is involved, and a figure labelled “Apparent energies” of what appears to be a lens flare in the camera does little to enlighten further. Peter Medawar rightly criticized the use of scientific terms in a nonscientific way in Teilhard de Chardin’s *The Phenomenon of Man*.

The general impression of *The Postdigital Membrane* is that of a literary Rorschach test, where the reader may see what he or she pleases. Are the translucent pages meant to represent the membrane, which “like a transparent wall both connects and divides?” Or is the laterally reversed image more like a Looking Glass? And why were the authors haunted by a vivid image of a bicyclist repairing a puncture on a bike on which he or she was riding?

The literal-minded might say it is obvious: the rider was on a tandem and was repairing a spare inner tube. But of course, a student who offered a literal interpretation of a Zen koan would soon get a whack from the Master. One feels that Pepperell and Punt would be more forgiving. As they say in their introduction, they do not claim that “the postdigital membrane is a complete theory or even a coherent set of ideas.”

Still, as the writer of Ecclesiastes wrote, “writing books involves endless hard work” (although with word processors, despite Pepperell and Punt’s reservations, it is much less work than in days gone by, and even an index can be generated fairly readily). Many other objections could be made regarding this singular oeuvre, but as Stephen Potter emphatically said, “Anybody can criticize but how very few do.”

**SYNAESTHESIA: THE STRANGEST THING**


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A valuable addition to the literature on synesthesia (as we Americans spell it), John Harrison’s book presents a cogent analysis of the phenomenon, which will appeal to scientists and to the general public. While the work focuses on a series of experiments on colored hearing directed by Harrison’s mentor Simon Baron-Cohen, it provides a careful exposé of the historical and scientific framework of those experiments. Harrison’s discussion of the changing historical nature of evidence in experimental psychology is particularly welcome and sheds light on a whole range of disciplines where cognitive processes are the object of scientific investigation. His chapter on notable synesthetes, while not integral to his argument, proceeds gracefully and will be of particular interest to those unfamiliar with synesthesia. The crux of his argument, hierarchically developed over anatomical, physiological, and psychological hypotheses on synesthesia, resolves in a series of experiments with synesthetes, where he brings neurobiology, statistics and genetics into play, with a brief but critical role for imaging technology.