

puzzle about sixth or ninth plates until he or she reaches p. 239 and discovers the equivalent dimensions. (The system is based on relative surface area so that a quarter plate, for example, has half the length and half the breadth of a full plate, which is defined as  $8.5 \times 6.5$  inches. Some stock sizes only approximate this relationship; a ninth plate happens to be  $2.5 \times 2$  inches, which is actually closer to an eleventh of the area of a full plate.) This is but one example of the extensive entry-level knowledge that the editor expects of his audience. None of the information in the first three paragraphs of this review can be gleaned from the pages of *America and the Daguerreotype*, and the lack of two or three beginning pages of background material surely detracts from the utility of the book outside the purview of specialists.

## AFRICA: THE ART OF A CONTINENT

edited by Tom Phillips. Prestel, New York, NY, U.S.A. 1999. 600 pp., illus. Paper. ISBN: 3-791-32004-1.

*Reviewed by Robert Pepperell, Winchester Wharf, Clink Street, London SE1 9DG, U.K. E-mail: rob@ninjatune.net>*

This book was first produced to coincide with the exhibition "Africa: The Art of a Continent" at the Royal Academy, London, in 1995, which marked a distinct moment in Western culture's relation to Africa and its art. Our perceptions about the art of this huge land mass have been colored by what was at first colonial exoticism and what became, in the twentieth century, a kind of modernist idolatry. The exhibition and this well-illustrated, scholarly book that documents it provide an opportunity to consider these artifacts on their own cultural terrain as products of diverse and ancient traditions. The examples shown, and the accompanying commentary, provide vivid evidence of the delicacy, imaginativeness and complexity of these objects and dispel any lingering notions of "primitivism" or "barbarism."

What often distinguishes African art from European fine art objects (other than the level of energetic intensity they embody) is the active, practical uses to which they are put. Despite the occasional tendency by some of the authors to talk of "schools" and "masterpieces," the book demonstrates clearly how

many of the objects do not conform to our expectations of "art," i.e. as being primarily aesthetic in purpose. Whether they are ritual masks, head-rests, shields, aprons, initiation tools or altar pieces, the objects invariably perform some social or ritual function that, to some extent, determines their appearance. A striking example is the Mande altar piece (p. 498): a stunted hippopotamus made of congealed blood and other caked organic matter. Seen "in the flesh" it unnervingly convinces one of its claim to contain large amounts of energy (*nyama*) from its frequent uses in secret magical ceremonies.

Indeed, if there were a criticism to be made of the exhibition and by implication this book, it is that it could have done more to situate the objects in their original active contexts. Visiting the exhibition one sometimes got the sense of a natural history museum full of fantastic specimens stuffed and posed in glass cases, demanding that the artifacts be judged on purely visual criteria. A leap of imagination was required to transform these static objects into animated participants in a rich cultural process. That said, this book represents an advance in the general understanding of these incredible objects on their own vital and dynamic terms.

## VIRTUALITIES: TELEVISION, MEDIA ART AND CYBERCULTURE

by Margaret Morse. Indiana Univ. Press, Bloomington and Indianapolis, IA, U.S.A., 1998. 304 pp. Trade, \$39.95; Paper, \$19.95. ISBN: 0-253-33382-2; 0-253-21177-8.

*Reviewed by Yvonne Spielmann, University of Siegen, SFB-240, A 13, 57068 Siegen, Germany. E-mail: <spiel@khm.de>*

Social and culture theory in its recent inquiry tells us that established philosophical, political and cultural concepts of division, difference and dualism steadily collapse. Where the discourse takes into closer consideration the effects of the unstoppable expansion of late capitalism—such as the advance of the attributes of Western civilization at a global scale and the (virtual and literal) fall of the last frontiers in worldwide networked power and control—the critical analysis concludes that we have entered a stage of development that Fredric Jameson has called the "world-system." Interestingly, the rap-

idly homogenizing processes that affect economic structures, political systems, cultural practices and languages produce simplifications on all levels of knowledge and information, whereas internal characteristics corrode and extinguish. Even the spheres of arts and media do not evade this maelstrom. Quite deliberately, it seems, media arts and related cultural practices abandon the notion of interrelationship and exchange between separate entities, media and materials that have developed with the advent of modern art, particularly in multimedia, montage and collage. Thus, the concept of media communication that literally mediates a gap and exchanges between different entities is constantly given up in favor of convergence, merger and fusion.

Moreover, the widely described "global character" of transnational networks in communication technology, finance and commerce, media entertainment and information warfare (lately exemplified in the "bombardment" of NATO television news to the Serbian population) also finds a parallel in philosophical debates of universal sameness. Not only those who argue either apocalyptic or integrationist stances (to rephrase an earlier insight into intellectual standards given by Umberto Eco), but more importantly much of postmodern and deconstructivist philosophy, has centrally raised to its stock of knowledge the dissolution of the formerly strongly held belief in the idea of the subject/object and mind/body division. But what presumably is given up here does not refer only to hierarchy and authoritarian power, to the hegemony of Eurocentrism and the centrality of the absolute "I" as shaped with the emergence of subjectivity in Renaissance. Because if we take the collapse of subject/object dualism and the idea of wholeness one step further and turn to the representatives of cyberculture, who praise hybrid interchangeability with the computer machine and the universal access of everything at once, we may ask if there is still reason and need for a crucial division between mind and body, between the actual and virtual.

The question is in particular crucial when medicine, military and artists work on Artificial Intelligence (AI) and Artificial Life (A-Life) projects and the leading idea is that the implantation of artificial parts into the bodily "system" and its replacement with smart agents may overcome human and biological

“faults” such as disease, age, gender and ethnic difference and finally create the universal human-machine-system. Inverse to prostheses where bodily functions are mechanically extended, in A-Life and cyborg worlds the machine creates the standard for the subject: only human functions that improve may become machine. Such ideas of deleting difference are not only virtually shaped in cyberworld’s figuration of replicas as self-generating bodies without originals, and they are not only part of the transformative concepts of a performance artist such as Stelarc, they also find a stunning highlight in the “real” world with biology’s experiments of genetic cloning.

Margaret Morse in her comparative study *Virtualities: Television, Media Art and Cyberculture* takes a highly political standpoint against the “collapsing boundaries,” in particular, she draws on the de-humanizing aspects of the cyberworld that she identifies in the notion of “disembodiment.” In particular, the book points out that the “negation of the organic body” causes wide-ranging changes at the symbolic level of cultural and social structures that also maintain generally believed representational functions. Morse’s major concern is to understand the shifting notion in the concepts of possible interrelationships between humans and machines. In contextualizing the interrelationship between ideas of the machine-human with the human-machine she regards the underlying cultural needs of the shift and overall insists on the need for difference.

Right from the beginning the book clearly distinguishes the personal and subjective context, namely the inter-subjective level of discourse from the mediated level of interaction with machines that on a symbolic level create the type of “impersonal” relations with machines that more and more replaces the personal relations. In questioning cultural needs for a symbolic system such as cyberculture that cuts off the context of the subject, Morse looks back into the history of communication technologies and convincingly further develops Raymond Williams’s argument that the experience of isolation in post-war Western society could be abolished through television that addresses the “viewer with ‘we’ and ‘you.’” Where this type of human-machine relation did allow much of the population to belong to a “shared culture” and to overcome the isolation of living in suburbia “what

he [Williams] called ‘mobile privatization,’” the function of human-machine interface of virtual reality fundamentally differs.

The above-mentioned effects of globalization first of all manifest a cultural split that divides the “happy few” that are immersed into the machine from the large majority of others who are excluded from access and become subject to increasing impoverishment. So here, the “imperative” of social division reaches the “absolute.” As Morse says, “to be excluded from information society is to become invisible to those enveloped by virtual worlds and engrossed in interaction with machines” (p. 35). The inner structure of the computer interface—that is, the virtual reality of cyberculture—cannot be regarded as the place to represent shared beliefs and moral values. On the contrary, it is “non-space,” it is capable of “multiple,” “continuous” and “virtual” interaction in the presence of here and now; it circulates information almost immediately but does not “represent” at all—so that, as Morse explains, the viewers/users feel “immersed” instead of addressed.

Virtual relationships and virtual environments shape the realm of cyberculture where the development of information technology has reached the point of constructing “full fledged parallel visible worlds” (p. 6). The main criteria of what Morse discusses in terms of “interactive and immersive technologies” are that the human-machine relations transgress into environmental spheres so that the viewer/user is incorporated (“immersed”) into the construction of virtual 3D reality that is presently processed. Thus the system of representation that is built upon the referential belief of images shifts in such ways that internal and external features merge into multiple options of presence of fictions. The features of cyberculture in the book are at best described with the feedback in the computer that expands “personhood” (Williams) to machines.

Differentiation or “models of ‘penetration’ and discursive exchange are necessary and useful precisely because the power relations of mobile privatization are the conventional expression of a kind of legal and social fiction based on widely held values” (p. 124). The study precisely observes the degrees in the development of “virtual interacting” and crucially points out the shift in television graphics that creates hyperrealistic depth and thereby the im-

pression of “immersion” into the world behind the screen. In following up 3D computer graphics that increase the scale and dimension of such virtual effects, Morse’s attention for the “impersonal” aspect in human-machine relations calls in particular for the “personal” experience and the awareness of one’s own body when we plunge into larger virtualities such as virtual landscapes. The body remains the critical stage from where Morse evaluates the spaces between the body and the image and takes up her critique of disembodiment in the notion of cyberculture.

When the human-machine interaction in cyberculture dissolves context and distance on the personal level, the human body may rather be conceived as malfunction of the cyborg. Where the human is subordinated to the machine, so that the machine quite literally incorporates the human and the established notion of the “I,” it is the symbolic machine that will represent the ultimate death drive. Because, as Morse clears up, the logic of the machine is to reduce diversity to sameness and the cyborg’s mode of becoming is to replicate oneness. At the end of her already well-known essay “What Do Cyborgs Eat?,” which as other previously published writing is reworked into the book, Morse—instead of the described predominant model of assimilating the human to the machine—critically switches the perspective and reflects on the opposite: “how can cyborgs incarnate the human condition?” (p. 151).

As the subtitle of *Virtualities* suggests, the book is concerned with three main frames—namely, television, media arts and cyberculture—that are addressed with regard to their capacity to present complex virtual images and virtual environments. As we have seen, the virtual is considered another fiction of presence and the plural in virtualities indicates the degrees of cyberculture that emerge in different stages in media arts, in particular where the monitor and the screen are constantly transgressed and the presented imagery is extended into larger environments that take the shape of virtual landscapes.

Part 1 of the book defines virtualities that emerge with computer-based information technologies. They are defined as fictions in the present, in stark contrast to fictions of the past such as are represented through film and television. Part 2 basically develops the shift from sender-receiver interaction to immersive

spatial environments that takes place in the medium of television with the introduction of 3D computer graphics. These expansive images, as the book explains, are first presented in animated logos and openers. While this part closes with the critical investigation into disembodiment, the third and last part of the book explores visualizations of “discursive exchange” and alternatives to “impersonal relations” in recent media arts.

While at first the book clearly works out the strategic role of virtual imaging in warfare and in particular the development of virtual reality tools as war tactics to create “belief,” this is contrasted with artists that self-reflexively conduct virtualities to unfold the mechanisms of such a “realistic” look. Throughout the book Morse increasingly is concerned with media arts that differently express the notion of the virtual world and engages in bodily experiences. In particular she discusses installation works that are based in video and describes possibilities of “personal” interactions with the video image on monitor. Furthermore she considers the expansion of feedback and superimposition into the multiplicity of virtual space that is stored in the computer and allows for navigation and virtual voyaging. What is important here is that a concept of cyberspace gains shape that unfolds a model of human-machine interaction that does not remove or delete one or the other aspect. Rather the preferred model enhances the internal, affirms personal, subjective “interaction” between inside and outside, so that the experience of cyberspace is seen as grounded in the physical experience of one’s own body. “And, finally, although a virtual environment is an invention and a simulation that is prepared in advance, we (and even its designers) cannot fully anticipate what it means to experience that realm until we are ‘inside’” (p. 211). This notion of the body is grounded in the need of difference and against sameness. The experience will never be the same.

Beyond the emphasis on the “real” body in “virtual” reality, the book gives a wide range of definitions within an intense theoretical framework that thoroughly connects the recent debates on media culture with the conceptual history and discursive use of terms and models that have developed in linguistics, structuralism, film and television theories to understand media communication. The reader also greatly appreciates that the book closes with a detailed

and very useful reference index and gives a comprehensive bibliography.

## DESIGN BY NUMBERS

by John Maeda. MIT Press, Cambridge, MA, U.S.A., 1999. ISBN: 0-262-13354-7.

*Reviewed by Roy R. Behrens, Department of Art, Univ. of Northern Iowa, Cedar Falls, IA 50613-0362, U.S.A. E-mail: <ballast@netins.net>.*

*Design by Numbers* is both a book and an interactive tutorial in computer programming for artists and designers. While it is now common for printed books to include CD-ROMs, this one has instead its own website at <<http://dbn.media.mit.edu>>, where free software, called DBN (Design by Numbers), can be accessed, downloaded and used by anyone with a JAVA-enabled browser. Using the book and website in combination, it is the intention of the author (who heads the Aesthetics and Computation group at MIT) that designers, even those who are “mathematically challenged,” might quickly acquire “the skills necessary to write computer programs,” and, as a consequence, “come to appreciate the computer’s unique role in the future of the arts and design.” Unfortunately, the layout of the book is so unexceptional (particularly the dust jacket, which might have been used in a powerful way) that it is unlikely to convert any graphic designers, who create far more complex forms intuitively, with little or no knowledge of programming. As a result, it may only reach those who need it least, meaning those who are already straddling the line between art and mathematics, between graphic design and computer programming.

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## MERCHANT PRINCE AND MASTER BUILDER: EDGAR J. KAUFMANN AND FRANK LLOYD WRIGHT

by Richard L. Cleary. Heinz Architectural Center, Carnegie Museum of Art, Pittsburgh, PA, U.S.A. Distributed by Univ. of Washington Press, Seattle, WA, 1999. Exh. cat. ISBN: 0-880-390036-0.

*Reviewed by Roy R. Behrens, Department of Art, University of Northern Iowa, Cedar Falls, IA 50613-0362, U.S.A. E-mail: <ballast@netins.net>.*

Frank Lloyd Wright advised in his autobiography that “no home should ever be on a hill”; instead, it should be “of the hill, belonging to it.” Just as gestalt theory described the holistic connections between figures and backgrounds, Wright emphasized the interdependence of architectural structures and their surroundings. It is said that he always decided the site before considering a building’s style, its spatial orientation, or the materials with which to build it. Of all his projects, there may be no better example of that than Fallingwater (c. 1938); a small but elaborate home in the woods (commissioned by a wealthy Pittsburgh department store owner named Edgar J. Kaufmann). The building is embedded in the landscape, making it inseparable from the waterfall, woods and cantilevered rock ledges of its location. Whilst much has been written about Fallingwater as a completed structure, less has been said about its preparatory drawings, the friendship between merchant prince and master builder and the dozen projects that Wright and the Kaufmanns intended to build (few of which were ever realized) from 1934 until the architect’s death in 1959. This is the full-color catalog for an exhibition of fifty of the more than 600 Wright drawings for projects commissioned by Kaufmann, which opened on 10 April and continues through 3 October 1999 at the Heinz Architectural Center at the Carnegie Museum of Art in Pittsburgh.

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## STAIRWAYS TO THE STARS: SKYWATCHING IN THREE GREAT ANCIENT CULTURES

by Anthony Aveni. Wiley, New York, NY, U.S.A., 1997, 1999. 230 pp. Paper, \$15.95. ISBN: 0-471-32976-2.

*Reviewed by David Topper, 272 Oxford Street, Winnipeg, Manitoba, R3M 3J7 Canada. E-mail: <Topper@UWinnipeg.ca.br>.*

As I write this review, Venus is at its maximum brightness in the western sky at dusk, but I wonder how many folks, especially those living in cities, are aware of this fact. Fewer still know of the 584-day synodic cycle of Venus as the planet dances about the sun. But surely pre-modern and ancient cultures knew the sky, probably better than most