

The Desire for Transparency in an Era of Hybridity

Jay David Bolter

In very different ways, each of the papers in this section makes a case for hybridity in contemporary art and artistic practice. Amy Ione examines the impact of visual technologies on our understanding of art history. Dan Sandin discusses collaborations between scientists and artists at the Electronic Visualization Lab; in that case, the hybridity lies in the interaction of artistic and scientific ways of seeing. George Legrady's presentation of the Media Arts and Technology program at the University of California at Santa Barbara addresses hybridity in yet another sense; he is concerned with the hybrids that arise in combining the representational practices and disciplinary strategies of arts and engineering.

The variety of approaches in these essays makes it difficult for me to encompass them all in a single response. Instead, I would like to extend the observations of our contributors by noting how widespread our culture's commitment to hybridity has become. In addition, however, I want to offer a qualifying comment about the depth of that cultural commitment.

HYBRIDITY IN POPULAR CULTURE

Hybridity is not only a feature of contemporary digital art but also an accepted strategy in the production and consumption of popular media forms and technologies. For example, the World Wide Web—through its remediations of practically every earlier medium from print to film and television—has produced new genres and forms that continue to mutate and diversify. At the same time, digital technology itself is becoming increasingly hybrid, as numerous handheld devices are created as tools for digital communication. The single-purpose mobile phone is being replaced by devices that combine voice communication with digital cameras, e-mail access, web surfing, positioning (via GPS) and multimedia display. What new media enthusiasts call “convergence” is not the fusing of diverse technologies into a simple single appliance but rather the production of various multipurpose devices that, as hybrids, present different faces to different users depending on their needs and preferences.

These so-called third-generation mobile phones are hybrids that are already reaching our culture at large. Meanwhile, computer designers and many in the human-computer interface community are developing more advanced hardware and software—including “mixed reality” applications, which are

hybrid in the sense that they bring together the virtual and the physical. Mixed reality does not seek to separate the user from her physical (and social) environment, as screen-based applications and virtual reality often do [1]. While most screen-based applications, including most computer and video games, seek to transport the user into a seamless virtual world, mixed-reality applications deliver digitally generated text, graphics and sound into the user's world at appropriate points. Examples include the Tangible Bits initiative at the MIT Media Lab [2], the use of augmented reality to enhance the examination of fossils in a museum setting [3] and the design of electronic audio guidebooks to facilitate social interaction among visitors to museums and exhibits [4]. Mixed-reality applications are hybrids of the physical and digital whose purpose is to deliver information or experiences that will enhance or reconfigure the user's immediate relationship to the world around her.

Our culture manifests its interest in hybridity not only in digital forms such as the web or mixed reality, but also in such traditional yet still vigorous media as film and especially television. Although television is a screen-based medium, in recent years certain genres and styles have developed that are characterized by the hallmarks of hybridity: multiplicity and fragmentation. One influential style might be called the “MTV aesthetic.” Music videos often present the viewer with a cascade of short cuts that violate every rule of continuity editing. Making sense of a music video requires a visual grammar different from that of the traditional Hollywood film or television drama. For that matter, even a popular television drama such as *24* may use a split-screen technique to render hybrid the traditional, seamless televisual image.

While many individual television productions now exploit hybrid styles, these shows are still consumed in the traditional way—on a single screen. We can point to another level of hybridity in our media-saturated culture: the way in which audiovisual media are deployed on multiple screens in public spaces, such as malls, bars and restaurants, and airports. It is not unusual, for example, to find four or five televisions in a sports bar, all tuned to different sporting events. The sound on all the events is turned down, while background music may be provided from another source. Some of the customers may not be listening to the music, however, because they have brought their own MP3 players, or because they are talking on

ABSTRACT

Our culture has come to appreciate hybrid representational practices not only in digital media but also in traditional forms such as television and film. Nevertheless, our culture's fascination with a contrary representational practice—its “desire for immediacy”—remains strong. The desire for immediacy manifests itself not only in popular entertainment forms, but also (with unfortunate results) in the popular understanding of forms of scientific representation.

Jay David Bolter (educator), Department of Literature, Communication, and Culture, 0165, Georgia Institute of Technology, Atlanta, GA 30332-0165, U.S.A. E-mail: <jay.bolter@lcc.gatech.edu>

Based on a paper presented at “Hybridity: Arts, Science and Cultural Effects,” a special section of the 93rd Annual Conference of the College Art Association, Atlanta, GA, 19–16 February 2005.

their cell phones. Many people now prefer to be surrounded by such media forms throughout the course of the day, although (or because) they can only give selective and fleeting attention to any one form at any one time. Such viewers are compelled to shift between two modes, sometimes looking through a certain screen at the content offered and sometimes looking at the context in which all the screens serve to create a media environment. The hybridity of our media environments has the effect of breaking through the traditional smooth surface of representation that was for decades the dominant style in Hollywood film and television [5].

THE DESIRE FOR TRANSPARENCY

In many cases, hybrid representational practices are taken in our culture as signs of youthful, urban sophistication. Apple's advertising campaign for the tremendously successful iPod (a hybrid media device, especially in its Shuffle version) shows young people in silhouette dancing wildly to contemporary rock music. The very association of hybrid representation with urban culture has provoked a contrary response within the current American cultural spectrum: There is in many quarters a notable resistance to hybridity and a desire for its opposite.

The opposite of hybridity is transparency: those practices that strive for seamless, transparent representation of the real within a single medium or media form [6]. The goal of transparent representation is to efface the technologies and techniques of representation and to place the viewer in an apparently unmediated relationship to the objects or events represented. As a representational strategy, transparency in Western cultures dates back to the Renaissance, or indeed to ancient Greece, and it remains popular today. Segments of our contemporary culture still want representations that can be read singly and univocally, as hybrid representations can never be.

Even contemporary digital technology can be used in the service of transparency. For example, the photorealistic graphics in animated films (e.g. the *Toy Story* films and *Final Fantasy*) and in computer games (e.g. most games based on lived-action films, such as the Lord of the Rings games) often aim to be transparent by creating a look that is indistinguishable from live-action film. In live-action films, too, computer compositing is often used to make the technology disappear: that is, to erase wires and

other evidence of special effects. James Cameron's film *Titanic* featured hundreds of special effects, but the goal was to give the audience the impression that they were watching the sinking of a ship filmed in live action.

THE SCIENCE AND POLITICS OF TRANSPARENCY

Transparent representation may or may not correspond to the tastes of various communities in our fragmented culture. An (admittedly small) audience may prefer a hybrid film such as Mike Figgis's *Time Code*, which employs a split screen to display four simultaneous real-time video streams, to *Titanic*. A vastly larger audience will prefer the romantic message and transparent style of the Cameron film. Meanwhile, most digital artists today reject the aesthetic of transparent representation. Although a preference for transparency in popular film and television may be old-fashioned, it cannot be regarded as dangerous.

Two of our papers (those of Sandin and Legrady), however, deal in various ways with science and scientific representation, where the rejection of hybridity and a desire for transparency can be a cause for concern. To judge from presentations in popular news media (e.g. news magazines and the morning talk shows), a large segment of our culture is eager to read complex scientific imagery and data as transparent representations of the real. The media frequently portray experiments involving sophisticated imaging techniques as supporting reductionist arguments about human behavior and culture. Thus we are shown CAT or PET scans of human brains that appear to identify biological differences between men and women. The desire for transparent representation is not limited to such imagery; our popular culture wants transparency in the texts and equations of scientific discourse as well as the images.

The desire for transparency helps to explain the appeal of the "gene view": the notion that our genes determine individual behavioral choices as well as complex cultural practices. Thus, an article featured on the cover of the 25 October 2004 issue of *Time* magazine was entitled "The God Gene." The cover posed (and answered) the question: "Does our DNA compel us to seek a higher power? Believe it or not, some scientists say yes." Arguments made by scientists for the genetic basis of human behavior are never based simply on images. They are grounded in statistical evidence about

the frequency of particular genes in certain populations—for example, in the key 1993 article that focused media attention on the notion that one or more genes could be the "cause" of homosexuality [7]. Scientists admit that the evidence (statistics or images) can be interpreted in different ways—that is, they can be read multiply. The appeal of such arguments for the public, however, is precisely that the evidence seems to offer a single, simple underlying causal explanation. For public consumption, at least, the emblem for such argument takes the form of a scientific visualization (a digitally enhanced image of blood flow in the brain or an electron micrograph of a chromosome) or diagram (of a DNA molecule).

Ironically, the same desire for transparency can be mobilized in support of pseudo-science. It is a factor in what remains (embarrassingly) the leading debate in the social construction of science in the United States today—the creationism controversy. In her study *Evolution vs. Creationism*, Eugenie Scott identifies a continuum of creationist thinkers, from "Flat Earthers" to "Intelligent Design Creationists" [8]; for most on that spectrum, the issue is one of reading: how to read the scientific evidence against the text of the Bible. The desire for transparency leads creationists to deny what they regard as the complex (hybrid) reading practices of the biological sciences.

On the surface, creationists apparently favor multiplicity: that is, they are arguing that schools should offer students competing "theories" of the origins of life on Earth instead of the single reading of the evidence (the theory of evolution) supported by professional scientists. They propose one or another form of creationism as an alternate reading. Some are explicit in maintaining that this alternate should be a literal (transparent) reading of Genesis. Others avoid the charge of religious parochialism by giving the alternate reading the secular name "intelligent design." The argument for intelligent design is that the order and intricacy (the so-called irreducible complexity) of (at least some) biological systems cannot be explained without reference to an intelligent and purposive designer. To insist on design is to insist that we can read biology transparently: that we can look through the complexity (of nature as a text) to a clear plan—in other words, that we can see the author in the text. Furthermore, most creationists would certainly reject any disinterested, deist explanation of the order of

the biological world. They are univocal readers of the Christian Bible, which they believe to be a transparent representation of the world.

The resistance to hybridity in many forms of scientific and cultural practice remains strong, particularly in the United States. In fact, one way to understand the current American political experience is as a struggle between the representational practices of hybridity and transparency. Those who identify themselves as conservatives want to insist on single and homogeneous readings of cultural practices, which can then align with the clarity of their own positions. They propose, for example, "realistic" assessments of geopolitics, which means seeing through the complex representations of other cultures to understand the "dangers" that America faces. Those who identify themselves with liberal positions are more likely to acknowledge hybridity and multiplicity in world cultures and politics. As literal-minded conservatives are ascendant at this time, acknowledging (not to mention celebrating) hybridity seems almost by definition un-American, despite the fact that, as we have noted, hybridity is now widespread in popular culture. The conservative re-

sistance to all forms of hybridity also manifests itself as a resistance to much of contemporary art itself, which is insistently hybrid.

The resistance to hybridity and desire for transparency in art and in politics remain key aspects of contemporary American culture. These are aspects that critical art practice must inevitably confront if, as seems likely, it wants to continue to explore strategies of hybridity.

References and Notes

1. For a discussion of the distinction between "pure virtuality" and mixed reality as design strategies, see J.D. Bolter et al., "New Media and the Permanent Crisis of Aura," to be published in *Convergence* (Spring 2006). For examples of mixed-reality applications for education and entertainment, see B. MacIntyre, J.D. Bolter and M. Gandy, "Presence and the Aura of Meaningful Places," *7th Annual International Workshop on Presence* (PRESENCE 2004), Polytechnic University of Valencia, Valencia, Spain, 13–15 October 2004.
2. H. Ishii and B. Ullmer, "Tangible Bits: Towards Seamless Interfaces between People, Bits and Atoms," in S. Pemberton, ed., *Proceedings of CHI 1997: Conference on Human Factors in Computing Systems* (New York: ACM, 1997) pp. 234–241.
3. O. Bimler et al., "Merging Fossil Specimens with Computer-Generated Information." *IEEE Computer* 35, No. 9, 25–30 (September 2002).
4. P.M. Aoki et al., "Sotto Voce: Exploring the Interplay of Conversation and Mobile Audio Spaces," *Proceedings of CHI 2002: Conference on Human Factors*

in *Computing Systems* (New York: ACM, 2002) pp. 431–438.

5. In *Remediation*, Richard Grusin and I have called this process of breaking through the surface "hypermediacy"; J.D. Bolter and R. Grusin, *Remediation: Understanding New Media* (Cambridge, MA: MIT Press, 1999).

6. J.D. Bolter and D. Gromala, *Windows and Mirrors: Interaction Design, Digital Art, and the Myth of Transparency* (Cambridge, MA: MIT Press, 2003).

7. D.H. Hamer et al., "A Linkage between DNA Markers on the X Chromosome and Male Sexual Orientation," *Science* 261, 5119, (16 July 1993) pp. 321–327.

8. Eugenie C. Scott, *Evolution vs. Creationism: An Introduction* (Westport, CT: Greenwood Press, 2004) pp. 57–67.

Jay David Bolter is director of the Wesley New Media Center and Wesley Chair of New Media at the Georgia Institute of Technology. He is the author of Turing's Man: Western Culture in the Computer Age (1984); Writing Space: The Computer, Hypertext, and the History of Writing (1991; second edition 2001); Remediation (1999), with Richard Grusin; and Windows and Mirrors (2003), with Diane Gromala. In addition to writing about new media, Bolter collaborates to construct new digital media forms. With Michael Joyce, he created Storyspace, a hypertext authoring system. With Blair MacIntyre at Georgia Tech, he is helping to build augmented-reality systems to stage dramatic and narrative experiences for entertainment and informal educational settings.

Copyright of Leonardo is the property of MIT Press and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.