

# New Media from Borges to HTML

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## The New Media Field: a Short Institutional History

The appearance of *The New Media Reader* is a milestone in the history of a new field that, just a few years ago, was somewhat of a cultural underground. Before taking up the theoretical challenge of defining what new media actually is, as well as discussing the particular contributions this reader makes to answering this question, I would like very briefly to sketch the history of the field for the benefit of those who are newcomers to it.

If we are to look at any modern cultural field sociologically, measuring its standing by the number and the importance of cultural institutions devoted to it such as museum exhibitions, festivals, publications, conferences, and so on, we can say that in the case of new media (understood as computer-based artistic activities) it took about ten years for it to move from cultural periphery to the mainstream. Although SIGGRAPH in the United States and Ars Electronica in Austria had already acted as annual gathering places of artists working with computers since the late 1970s, the new media field began to take real shape only in the end of the 1980s. Around that time new institutions devoted to the production and support of new media art were founded in Europe: ZKM in Karlsruhe (1989), New Media Institute in Frankfurt (1990), and ISEA (Inter-Society for the Electronic Arts) in the Netherlands (1990). (Jeffrey Shaw was appointed to be director of the part of ZKM focused on visual media while the Frankfurt Institute was headed by Peter Weibel.) In 1990 as well, Intercommunication Center in Tokyo began its activities in new media art (it moved into its own building in 1997). Throughout the 1990s, Europe and Japan remained the best places to see new media work and to participate in high-level discussions of the new field. Festivals such as ISEA, Ars Electronica, and DEAF have been required places of pilgrimage for interactive installation artists, computer musicians, choreographers working with

computers, media curators, critics, and, since the mid-1990s, net artists.

As was often the case throughout the twentieth century, countries other than the United States were first to critically engage with new technologies developed and deployed in the United States. There are a few ways to explain this phenomenon. Firstly, the speed with which new technologies are assimilated in the United States makes them “invisible” almost overnight: they become an assumed part of the everyday existence, something which does not seem to require much reflection. The slower speed of assimilation and the higher costs involved give other countries more time to reflect upon new technologies, as it was the case with new media and the Internet in the 1990s. In the case of the Internet, by the end of the 1990s it became as commonplace in the United States as the telephone, while in Europe the Internet still remained a phenomenon to reflect upon, both for economic reasons (U.S. subscribers would pay a very low monthly flat fee; in Europe they had to pay by the minute) and for cultural reasons (a more skeptical attitude towards new technologies in many European countries slowed down their assimilation). So when in the early 1990s the Soros Foundation set up contemporary art centers throughout the Eastern Europe, it wisely gave them a mandate to focus their activities on new media art, both in order to support younger artists who had difficulty getting around the more established “art mafia” in these countries and also in order to introduce the general public to the Internet.

Secondly, we can explain the slow U.S. engagement with new media art during the 1990s by the very minimal level of the public support for the arts there. In Europe, Japan, and Australia festivals for media and new media art such as the ones I mentioned above, commissions for artists to create such work, exhibition catalogs and other related cultural activities were funded by the governments. In the United States the lack of government funding for the arts left only two cultural players which economically could have supported creative work in new media: anti-intellectual, market- and cliché-driven commercial mass culture and equally commercial art culture (i.e., the art market). For different reasons, neither of these players would support new media art nor would foster intellectual discourse about it. Out of the two, commercial culture (in other words, culture designed for mass audiences) has played a more progressive role in adopting and

experimenting with new media, even though for obvious reasons the content of commercial new media products has had severe limits. Yet without commercial culture we would not have computer games using artificial intelligence; network-based multimedia (including various Web plug-ins which enable distribution of music, moving images and 3-D environments over the Web); sophisticated 3-D modeling; animation and rendering tools; database-driven Web sites; CD-ROMs, DVDs, and other storage formats; and most other advanced new media technologies and forms.

The 1990s the U.S. art world proved to be the most conservative cultural force in contemporary society, lagging behind the rest of the cultural and social institutions in dealing with new media technologies. (In the 1990s a standard joke at new media festivals was that a new media piece requires two interfaces: one for art curators and one for everybody else.) This resistance is understandable given that the logic of the art world and the logic of new media are exact opposites. The first is based the romantic idea of authorship which assumes a single author, the notion of a one-of-a-kind art object, and the control over the distribution of such objects which takes place through a set of exclusive places: galleries, museums, auctions. The second privileges the existence of potentially numerous copies; infinitely many different states of the same work; author-user symbiosis (the user can change the work through interactivity); the collective; collaborative authorship; and network distribution (which bypasses the art system distribution channels). Moreover, exhibition of new media requires a level of technical sophistication and computer equipment which neither U.S. museums nor galleries were able to provide in the 1990s. In contrast, in Europe generous federal and regional funding allowed not only for mountings of sophisticated exhibitions but also for the development of a whole new form of art: the interactive computer installation. It is true that after many years of its existence, the U.S. art world learned how to deal with and in fact fully embraced video installation—but video installations require standardized equipment and don't demand constant monitoring. Neither is the case with interactive installations or even with Web pieces. While in Europe equipment-intensive forms of interactive installation have flourished throughout the 1990s, the U.S. art world has taken the easy way out by focusing on "net art," i.e., Web-based pieces whose

exhibition does not require much resources beyond an off-the-shelf computer and a net connection.

All this started to change with increasing speed by the end of the 1990s. Various cultural institutions in the United States finally began to pay attention to new media. The first were education institutions. Around 1995 universities and art schools, particularly on the West Coast, began to initiate programs in new media art and design as well as open faculty positions in these areas; by the beginning of the new decade, practically every university and art school on the West Coast had both undergraduate and graduate programs in new media. A couple of years later museums such as Walker Art Center began to mount a number of impressive online exhibitions and started to commission online projects. The 2000 Whitney Biennial included a room dedicated to net art (even though its presentation conceptually was ages behind the presentation of new media in such places as Ars Electronica Center in Linz, Intercommunication Center in Tokyo, or ZKM in Germany). Finally in 2001, both the Whitney Museum in New York and the San Francisco Museum of Modern art (SFMOMA) mounted large survey exhibitions of new media art (*Bitstreams* at the Whitney, *010101: Art in Technological Times* at SFMOMA). Add to this a constant flow of conferences and workshops mounted in such bastions of American Academia as the Institute for Advanced Studies in Princeton; fellowships in new media initiated by such prestigious funding bodies as the Rockefeller Foundation and Social Science Research Council (both begun in 2001); book series on new media published by such well-respected presses as the MIT Press. What ten years ago was a cultural underground became an established academic and artistic field; what has emerged from on-the-ground interactions of individual players has solidified, matured, and acquired institutional forms.

Paradoxically, at the same time as the new media field started to mature (the end of the 1990s), its very reason for existence came to be threatened. If all artists now, regardless of their preferred media, also routinely use digital computers to create, modify, and produce works, do we need to have a special field of new media art? As digital and network media rapidly become an omnipresent in our society, and as most artists came to routinely use these new media, the field is facing a danger of becoming a ghetto whose participants would be united by their fetishism of latest computer

technology, rather than by any deeper conceptual, ideological or aesthetic issues—a kind of local club for photo enthusiasts. I personally do think that the existence of a separate new media field now and in the future makes very good sense, but it does require a justification—something that I hope the rest of this text, by taking up more theoretical questions, will help to provide.

### Software Design and Modern Art: Parallel Projects

Ten years after the appearance of the first cultural institutions solely focused on new media, the field has matured and solidified. But what exactly is new media? And what is new media art? Surprisingly, these questions remain not so easy to answer. The book you are now holding in your hands does provide very interesting answers to these questions; it also provides the most comprehensive foundation for the new media field, in the process redefining it in a very productive way. In short, this book is not just a map of the field as it already exists but a creative intervention into it.

The particular selections and their juxtaposition this book re-define new media as parallel tendencies in modern art and computing technology after the World War II. Although the editors of the anthology may not agree with this move, I would like to argue that eventually this parallelism changes the relationship between art and technology. In the last few decades of the twentieth century, modern computing and network technology materialized certain key projects of modern art developed approximately at the same time. In the process of this materialization, the technologies overtook art. That is, not only have new media technologies—computer programming, graphical human-computer interface, hypertext, computer multimedia, networking (both wired-based and wireless)—actualized the ideas behind projects by artists, they have also extended them much further than the artists originally imagined. As a result these technologies themselves have become the greatest art works of today. The greatest hypertext is the Web itself, because it is more complex, unpredictable and dynamic than any novel that could have been written by a single human writer, even James Joyce. The greatest interactive work is the interactive human-computer interface itself: the fact that the user can easily change everything which appears on her screen, in the

process changing the internal state of a computer or even commanding reality outside of it. The greatest avant-garde film is software such as Final Cut Pro or After Effects which contains the possibilities of combining together thousands of separate tracks into a single movie, as well as setting various relationships between all these different tracks—and it thus it develops the avant-garde idea of a film as an abstract visual score to its logical end, and beyond. Which means that those computer scientists who invented these technologies—J. C. R. Licklider (◊05), Douglas Engelbart (◊08. ◊16), Ivan Sutherland (◊09), Ted Nelson (◊11, ◊21, ◊30), Seymour Papert (◊28), Tim Berners-Lee (◊54), and others—are the important artists of our time, maybe the only artists who are truly important and who will be remembered from this historical period.

To prove the existence of historical parallelism, *The New Media Reader* positions next to each of the key texts by modern artists that articulate certain ideas those key texts by modern computer scientists that articulate similar ideas in relation to software and hardware design. Thus we find next to each other a story by Jorge Luis Borges (1941) (◊01) and an article by Vannevar Bush (1945) (◊02) which both contain the idea of a massive branching structure as a better way to organize data and to represent human experience.

The parallelism between texts by artists and by computer scientists involves not only the ideas in the texts but also the form of the texts. In the twentieth century artists typically presented their ideas either by writing manifestos or by creating actual art works. In the case of computer scientists, we either have theoretical articles that develop plans for particular software and/or hardware designs or more descriptive articles about already created prototypes or the actual working systems. Structurally manifestos correspond to the theoretical programs of computer scientists, while completed artworks correspond to working prototypes or systems designed by scientists to see if their ideas do work and to demonstrate these ideas to colleagues, sponsors and clients. Therefore *The New Media Reader* to a large extent consists of these two types of texts: either theoretical presentations of new ideas and speculations about projects (or types of projects) that would follow from them; or the descriptions of the projects actually realized.

Institutions of modern culture that are responsible for selecting what makes it into the canon of our cultural

memory and what is left behind are always behind the times. It may take a few decades or even longer for a new field which is making an important contribution to modern culture to “make it” into museums, books, and other official registers of cultural memory. In general, our official cultural histories tend to privilege art (understood in a romantic sense as individual products of individual artists) over mass industrial culture. For instance, while modern graphical and industrial designers do have some level of cultural visibility, their names, with the exception of a few contemporary celebrity designers such as Bruce Mau and Philip Stark, are generally not as known as the names of fine artists or fiction writers. Some examples of key contemporary fields that so far have not been given their due are music videos, cinematography, set design, and industrial design. But no cultural field so far has remained more unrecognized than computer science and, in particular, its specific branch of human-computer interaction, or HCI (also called human-computer interface design).

It is time that we treat the people who have articulated fundamental ideas of human-computer interaction as the major modern artists. Not only did they invent new ways to represent any data (and thus, by default, all data which has to do with “culture,” i.e. the human experience in the world and the symbolic representations of this experience) but they have also radically redefined our interactions with all of old culture. As the window of a Web browser comes to supplement the cinema screen, museum space, CD player, book, and library, the new situation manifests itself: all culture, past and present, is being filtered through the computer, with its particular human-computer interface. Human-computer interface comes to act as a new form through which all older forms of cultural production are being mediated.

*The New Media Reader* contains essential articles by some of the key interface and software designers in the history of computing so far, from Engelbart to Berners-Lee. Thus in my view this book is not just an anthology of new media but also the first example of a radically new history of modern culture—a view from the future when more people will recognize that the true cultural innovators of the last decades of the twentieth century were interface designers, computer game designers, music video directors and DJs — rather

than painters, filmmakers, or fiction writers, whose fields remained relatively stable during this historical period.

## What Is New Media? Eight Propositions

Having discussed the particular perspective adopted by *The New Media Reader* in relation to the larger cultural context we may want to place new media in—the notion of parallel developments in modern art and in computing—I now want to go through other possible concepts of new media and its histories (including a few proposed by the present author elsewhere). Here are eight answers; without a doubt, more can be invented if desired.

### 1 New Media versus Cyberculture

To begin with, we may distinguish between new media and cyberculture. In my view they represent two distinct fields of research. I would define cyberculture as the study of various social phenomena associated with the Internet and other new forms of network communication. Examples of what falls under cyberculture studies are online communities, online multi-player gaming, the issue of online identity, the sociology and the ethnography of email usage, cell phone usage in various communities, the issues of gender and ethnicity in Internet usage, and so on.<sup>1</sup> Notice that the emphasis is on the *social* phenomena; cyberculture does not directly deal with new cultural objects enabled by network communication technologies. The study of these objects is the domain of new media. In addition, new media is concerned with cultural objects and paradigms enabled by all forms of computing and not just by networking. To summarize: cyberculture is focused on the social and on networking; new media is focused on the cultural and on computing.

