Lev Manovich

Post-media Aesthetics

Medium in Crisis

In the last third of the twentieth century, various cultural and technological developments have together rendered meaningless one of the key concepts of modern art – that of a medium. However, no new topology of art practice came to replace media-based typology which divides art into painting, works on paper, sculpture, film, video, and so on. The assumption that artistic practice can be neatly organized into a small set of distinct mediums has continued to structure the organization of museums, art schools, funding agencies and other cultural institutions -- even though this assumption no longer reflected the actual functioning of culture.

Few different developments have contributed to this conceptual crisis. From the 1960s onward the rapid development of new artistic forms – assemblage, happening, installation (including its various sub-forms such as site-specific installation and video installation), performance, action, conceptual art, process art, intermedia, time-based art, etc., has threaten the centuries-old typology of mediums (painting, sculpture, drawing) because of the sheer fact of the multiplicity of these forms. In addition, if the traditional typology was based on difference in materials used in art practice, the new mediums either allowed for the use of different materials in arbitrary combinations (installation), or, even worse, aimed to dematerialize the art object (conceptual art). Therefore the new forms were not really mediums in any traditional sense of the term.

Another mutation in the concept of medium came about as new technological forms of culture were gradually added to the old typology of artistic mediums. Photography, film, television and video gradually appeared in the curriculum of art schools and were given

separate departments in art museums. In the case of traditional (i.e., pre-digital) photography and film, thinking of them as separate mediums in a traditional sense of the term still made sense: they used different material base (photographic paper in the case of photography, film stock in the case of film), and they would also neatly fall on two different sides of another fundamental distinction used by traditional aesthetics in defining the typology of mediums: that of between spatial arts (painting, sculpture, architecture) and temporal arts (music, dance). Since photography dealt with still images and film dealt with moving images whose perception required time, and since they relied on distinct materials, adding these two forms to the typology of artistic media did not threaten the concept of medium.

However, in the case of television and video things were not so easy. Both *mass* medium of television and *art* medium of video used the same material base (electronic signal which can be transmitted live or recorded on a tape) and also involved the same conditions of perception (television monitor). The only justifications of treating them as separate mediums were sociological and economic, i.e. the differences in sizes of their respective audiences, in mechanisms of distribution (via television network versus museum and gallery exhibition), and in the number of copies of a tape/program being made.

The case of television versus video is one example of how the old concept of medium used by traditional aesthetics to describe various arts came into conflict with the new set of distinctions important in the twentieth century: between art and mass culture. While modern art system involved circulation of objects which were either unique or existed in small editions, mass culture dealt mass distribution of identical copies – and thus depended on various mechanical and electronic reproduction and distribution technologies. As artists begun to use the technologies of mass media to make art (be it photography, films, radio art, video art, or digital art), the economy of art system dictated that they use technologies designed for mass reproduction for the opposite purpose – to create limited editions. (Thus visiting a contemporary art museum we find such conceptually contradictory objects as "video tape, edition of 6" or "DVD, edition of 3.") Gradually, this sociological difference in

the distribution mechanisms, along with other sociological differences already mentioned (the size of an audience and the space of reception/exhibition), became more important criteria in distinguishing between mediums than the distinctions in material used or conditions of perception. In short, sociology and economics took over aesthetics.

Digital Attack

Along with the arrival of mass media throughout the twentieth century, and the proliferation of new art forms beginning in the 1960s, another development that threatened the traditional idea of a medium was digital revolution of the 1980s-1990s. The shift of most means of production, storage and distribution of mass media to digital technology (or various combinations of electronic and digital technologies), and adoption of the same tools by individual artists disturbed both the traditional distinctions based on materials and conditions of perception and the new, more recent distinctions based on distribution model, method of reception/exhibition and payment scheme.

On the material level, the shift to digital representation and the common modification/editing tools which can be applied to most media (copy, paste, morph, interpolate, filter, composite, etc.) and which substitute traditional distinct artistic tools erased the differences between photography and painting (in the realm of still image) and between film and animation (in the realm of a moving image).[1] On the level of aesthetics, the Web has established a *multimedia* document (i.e., something which *combines* and mixes different media of text, photography, video, graphics, sound) as a new communication standard. Digital technology has also made much easier to implement the already existing

[1] For a more extensive discussion of this shift, see the chapter "Digital Cinema and the History of a Moving Image," in The Language of New Media (Cambridge, Mass.: The MIT Press, 2001).

cultural practice of making different versions of the same project for different mediums, different distribution networks and different audiences. And if one can make radically different versions of the same art object (for instance, an interactive and non-interactive versions, or 35mm film version and Web version), the traditional strong link between the identity of an art object and its medium becomes broken. On the level of distribution, the Web has dissolved (at least in theory) the difference between mass distribution, previously associated with mass culture, and limited distribution previously reserved for small subcultures and the art system. (The same Web site can be accessed by one person, ten people, ten thousand people, ten million people, etc.)

These are just some examples of how traditional concept of medium does not work in relation to *post-digital, post-net culture*. And yet, despite the obvious inadequacy of the concept of medium to describe contemporary cultural and artistic reality, it persists. It persists through sheer inertia – and also because to put in place a better, more adequate conceptual system is easier said than done. So rather than getting rid of media typology altogether, we keep adding more and more categories: "new genres," interactive installation, interactive art, net art. The problem with these new categories is that they follow the old tradition of identifying distinct art practices on the basis of the materials being used - only now we substitute different materials by different new technologies.

For instance, all art on the Net, i.e., art which uses the technology of the Net, is lumped onto a single category of "net art." But why shall we assume that all art objects that share Net technology should have anything in common as far as their reception by users is concerned?[2] The idea of "interactive art" is similarly problematic. As I suggested previously,

[2] Outside of art, the Net maybe is best thought of as a number of distinct mediums that share some technologies and communication but ultimately have their own distinct identities. For instance, Net used for email is one medium, commercial Web sites is another medium.

> Used in relation to computer-based media, the concept of interactivity is a tautology. Modern human-computer interface (HCI) is by its very definition interactive. In contrast to earlier interfaces such as batch processing, modern HCI allows the user to control the computer in real-time by manipulating information displayed on the screen. Once an object is represented in a computer, it automatically becomes interactive. Therefore, to call computer media interactive is meaningless -- it simply means stating the most basic fact about computers.[3]

Just as we should not assume that all artworks which use the technology of the Net belong to the medium of "net art," it is a mistake to put all art objects which use -- or, more precisely, form a layer on top of -- interactive technology of modern computing into one category of "interactive art." We may want to put forward a proposition that there *can* be a distinct medium of net art based on the technology of the Net, but it is a mistake to automatically identify all art which uses the Net as "net art."

A Program for Post-media Aesthetics

Within the space of this article I cant begin to develop a new conceptual system which would replace the old discourse of mediums and which would be able to describe *post-digital*, *post-net* culture more adequately. However, what I can do is to suggest one particular direction we may want to pursue in developing such a system. This direction would involve substituting the concept of medium by new concepts from from computer and net culture. These concepts can be used both literally (in the case of actual computer-

[3] Manovich, The Language of New Media.

mediated communication) and metaphorically (in the case of pre-computer culture). So here is how such *post-media aesthetics* may look like:

1. Post-media aesthetics needs categories that can describe how a cultural object *organizes data* and *structures user's experience of this data*.
2. The categories of post-media aesthetics *should not be tied to any particular storage or communication media*. For instance, rather than thinking of "random access" as a property specific to computer medium, we should think of it as a general strategy of data organization (which applies to traditional books, architecture) and, separately, as a particular strategy of user's behavior.[4]
3. Post-media aesthetics *should adopt the new concepts, metaphors and operations of a computer and network era*, such as information, data, interface, bandwidth, stream, storage, rip, compress, etc. We can use these concepts both when talking about our own post-digital, post-net culture, and when talking about the culture of the past. I think of a later approach not just as an interesting intellectual exercise but as something which ethically we must do -- in order to see old and new culture as one continuum; in order to make new culture richer through the use of the aesthetic techniques of old culture; and in order to make old culture comprehensible to new generations which are comfortable with concepts, metaphors and techniques of a computer and network era. As an example of such approach, we can describe Giotto and Eisenstein not only as an early Renaissance painter and a modernist filmmaker, but also as important *information designers*. The first invented new ways to organize data within a static two-dimensional surface (a single panel) or a 3-D space (a set of

[4] An excellent example of a new category which takes into account recent computer-based texts but at the same time can be used to talk about pre-computer texts is "ergodic literature" developed by Espen Aarseth in his Cybertext: Perspectives on Ergodic Literature (Baltimore: Johns Hopkins University Press, 1997).

panels in a Church building); the second pioneered new techniques to organize data over time and to coordinate data in different media tracks to achieve maximum affect on the user. In this way, a future book on information design can include Giotto and Eisenstein alongside Allan Kay and Tim Berners-Lee.

4. The traditional concept of a medium emphasizes the physical properties of a particular material and its representational capacities (i.e., the relationship between the sign and the referent.) As traditional aesthetics in general, this concept encourages us to think about the author's intentions, the content and the form of an artwork -- rather than the user. In contrast, thinking of culture, media and individual cultural works as *software* allows us to focus on the operations (called in actual software applications "commands") that are available to the user. The emphasis shifts on user's capabilities and user's behavior. *Rather than using the concept of medium we may use the concept of software to talk about past media, i.e., to ask about what kind of user's information operations a particular medium allows for*.[5]
5. Both cultural critics and software designers came to draw a distinction between an ideal reader/user inscribed by a text/software and the actual strategies of reading/use/re-use employed by actual users. Post-media aesthetics needs to make a similar distinction in relation to all cultural media, or, to use the just introduced term, *cultural software*. The available operations and the "right" way of using a given cultural object are different from how people actually come to use it. (In fact, a

[5] We can make a parallel here with the trajectory of cultural criticism in the last few decades. Beginning in the 1970s, cultural criticism shifted attention from the author and the text to the strategies/practices of readership (psychoanalysis, cultural studies, ethnography). Critics emphasized that each reader constructs her/his own text and that readers employ various strategies of reading/interpreting/re-using cultural texts. In parallel, the designers of human-computer interfaces and software in general started to study the actual ways users employ software and other information technology.

fundamental mechanism of recent culture is a systematic "mis-use" of cultural software, such as scratching the records in DJ culture, or remixing old tracks).

6. Users' tactics (to use the term of Michel de Certau) are not unique or random but follow particular patterns. I would like to introduce another term *information behavior* to describe a particular way of accessing and processing information available in a given culture. We should not always a priory assume that given information behavior is "subversive"; it may closely correlate to the "ideal" behavior suggested by software, or it may differ from it simply because a given user is just a beginner and has not mastered the best ways to use this software.

Information Behavior

Just as the term "software" shifts the emphasis from media/text to the user, I hope that the term "information behavior" also can help us to think about the dimensions of cultural communication, which previously went unnoticed These dimensions have always been there, but n information society they have rapidly became prominent in our lives and thus intellectually visible. Today our daily life consists from information activities in the most literal way: checking email and responding to email, checking phone messages, organizing computer files, using search engines, etc. In a simplest way, the particular way people organize their computer files, or use search engines, or interact on the phone can be thought of as information behavior. Of course, according to a cognitive science paradigm, human perception and cognition in general can be thought of as information processing – but this is not what I mean here. While every act of visual perception or of memory recall can be understood in information processing terms, today there is much more to see, filter, recall, sort through, prioritize and plan. In other words, in our society daily life and work to a large extent revolve against new types of behaviors activities which involve seeking, extracting,

processing and communication large amounts of information, often quantitative one – from navigating a transport network of a large city to using World Wide Web. Information behaviors of an individual form an essential part of individual identity: they are particular tactics adopted by an individual or a group to survive in information society. Just as our nervous system has evolved to filter information existing in the environment in a particular way suitable for information capacity of a human brain, to survive and prosper in. information society, we evolve particular information behaviors.[6]

Like other concepts of information society such as software, data, and interface, the concept of information behavior can be applied beyond specific information activities of the present, such as our usage of a Palm Pilot, Google or a metro system. It can be extended into a cultural sphere and also projected into the past. For instance, we may think about information behaviors used in reading literature, visiting a museum, surfing TV, or choosing which tracks to download from Napster. Applied to the past, the concept of information behavior emphasizes that all past culture was not only about representing religious beliefs, glorifying rulers, creating beauty, legitimizing ruling ideologies, etc. – it was also about *information processing*. Artists developed new techniques of encoding information while listeners, readers and viewers developed their own cognitive techniques of extracting this information. The history of art is not only about the stylistic innovation, the struggle to represent reality, human fate, the relationship between society and the individual, etc. – it is also *the history of new information interfaces developed by artists, and the new information behaviors developed by users*. When Giotto and Eisenstein developed new ways to organize information in space and in time, their viewers had to also develop the appropriate ways of navigating these new information structures – just as today every new major release of a new

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[6] Geert Lovink's ironic description of a figure of "Data Dandy" focuses our attention on the extent to which dealing with information has become a defining cultural characteristic of our time. See Adilkno, The Media Archive (Brooklyn, New York: Autnomedia,1998), 99.

version of familiar software requires us to modify information behaviors we developed in using a previous version.

Surrounded by information interfaces in their everyday life, critics and artists have already begun to selectively think about past culture in terms of information structures. A good example of this is the prominence given to Francis Yates's book The Art of Memory in new media discussions. What I am suggesting, however, is that such concepts as information interface and information behavior can be applied to any cultural object, past and present. In short, every cultural object is partly a Palm Pilot.

Software as a New Object of Cultural Analysis

How would post-media aesthetics, as I briefly sketched it here, fit within the history of cultural theory of the last few decades? If we are to think of cultural communication following the basic information theory, that of author - text - reader (or, in proper terms of information theory, sender - message - receiver), this history can be summarized as a gradual shift in attention from the author to the text and then to the reader. Traditional criticism focused on the author, his/her creative intention, biography and psychology. Arriving in the end of the 1950s, structuralism shifted the focus to the text itself, analyzing it as a system of semiotic codes. After 1968, the critical energy gradually shifts from the text to the reader. This shift has taken place for more than one reason. On the one hand, it became apparent that structuralist approach had severe limitations: in treating every cultural text as an instance of a general system, structuralism did not have a lot to say about what made a given text unique and culturally important.[7] On the other hand, after the events of the 1968 it also

[7] In that respect, Roland Barthes's S/Z which describes the functioning of five semiotic code in Balzac short story, represents the unintentional

became clear that structuralist approach inadvertently supported the status quo, the Law, the System. Because structuralism wanted to describe everything as a close system and because it treated every individual cultural text as an instance of a more general "deep structure," structuralism turned out to be on the side of the norm rather than the exception, the majority rather than minority, the society, as it existed rather than as it could have been.

The shift from the text to the reader took a number of forms and it can be thought of as following two stages. At the first stage, the abstract text of structuralism is being replaced by an abstract, ideal reader, as imagined by psychoanalysis (Kristeva) and psychoanalytically informed criticism, Apparatus Theory in film theory, or Reception Theory in literature. By the 1980 this abstract reader is being replaced by actual readers and reader communities, both contemporary and historical, as analyzed by Cultural Studies, ethnography, the study of historical reception of early cinema in film studies, etc.

Having traversed the trajectory from the author to the text and to the reader, there can cultural criticism go next? In my view, we need to update information model (author – text – reader) by adding two more components to it – and then focus our critical attentions on these components. These components are *software used by the author and by the reader*. Contemporary author (sender) uses software to create a text (message), and this software influences, or even shapes the kinds of texts being created: from Frank Gerry relaying on special computer software in his architectural design to Andreas Gursky using Photoshop to DJs whose whole practice depends on actual software and/or software in a metaphorical sense: the operations allowed for by turntables, mixers and other electronic equipment originally used by DJs. Similarly, a contemporary reader (receiver) often interacts with a text

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admission of structuralism's defeat: Barthes selectively chooses to show the functioning of some codes in the story, unsystematically using different parts to illustrate the work of this or that code. So rather than producing a scientific structural analysis he ends up writing a stimulating but completely idiosyncratic work of cultural interpretation. Roland Barthes, S/Z, translated by Richard Miller (New York, Hill and Wang, 1974).

using actual computer software such as Web browser, or software in a metaphorical sense, that is, older hardwired interfaces -- particular controls provided by various electronic devices such as a CD player. (Given that modern computer software often imitates already existing hardware interfaces – for instance, a QuickTime Player simulating controls of a standard VCR - this distinction is not as relevant as it may at first appear.) This software shapes how the reader thinks of a text; in fact, it defines what the given text is, be it a set of separate tracks on a CD or a set of multimedia components and hyperlinks presented as a Web page.[8]

So far I talked about communication model as formulated in information theory as consisting from three components: sender, message and receiver. In actuality, this model was more complex, having seven components all together sender, sender's code, message, receiver, receiver's code, channel and noise. According to the model, the sender encodes a message using his own code; the message then transmitted over a communication channel; in the course of transmission it was affected by noise. The receiver decodes the message using his own code. Because of the limited bandwidth capacity of the channel, the presence of noise and possible discrepancy between the sender's and receiver's codes, the receiver may not receive the same message as send by the sender. Developed originally for such applications as telecommunication (telephone and television transmission) in the 1920s-1930s and code encryption and decoding during the World War II, the goal of information theory was to help engineers construct better communication systems.

Different problems emerge as communication model is adopted as a model of cultural communication. The engineers who developed this model were concerned with the accuracy

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[8] Earlier I said that the concept of software allows us to think about particular information operations that a user can perform in a given medium. It is interesting that historically modern media theory and modern cultural criticism never systematically met, except in the works of Friedrich Kittler and his students and followers.

of message transmition, but in cultural communication, the idea of accurate transmission is dangerous: to assume that communication is only successful if the receiver accurately reconstructs the sender's message is to privilege the sender's meaning over receiver's meaning. (We can say that Cultural Studies which focuses on "subversive" uses of dominant culture, goes to another extreme as it assumes that only "unsuccessful" communication is worth studying.)

In addition, communication model treats code and channel (the latter corresponding to "medium" as this term is commonly used) as passive, mechanical components: they are simply the required tools necessary to transmit a pre-existing message. Since the model originally emerged in the context of telecommunication, it assumes that unmediated oral or visual communication – two people talking to each other or a person looking at reality – is ideal. It is only because we want such communication to take place over a distance we need to bother with codes and a channel.

I think that adding the components of author's software and reader's software to the model emphasizes the active role technology (i.e. what the original model calls codes and channel) plays in cultural communication. Authoring software shapes how the author understands the medium she/he works in; and consequently, they play a crucial role in shaping the final form of a techno-cultural text. For the reader who accesses this text through the software interface, this interface similarly shapes his/her understanding of the text: what types of data the text contains, how is it organized together, what else is possible what is not possible to communicate. In addition, software tools (again, both actual computer software and software in a metaphorical sense, i.e., a set of data operations and metaphors employed by a particular media or representational technology) are what allow the authors and the users to re-mix new cultural texts out of existing texts. Again, the example of DJ practice can be evoked here.

What are the dangers of a post-media aesthetic theory sketched here? As any other paradigm, it privileges some directions of research at the expense of others. So while it can be productive to begin approaching history of culture as the history of information interfaces, information behaviors, and software, such a perspective can make us less attentive to other aspects of culture. The most immediately obvious danger is that in its emphasis on information structures and information behaviors post-media aesthetics privileges cognitive dimensions of culture without providing any obvious way to think about affect.

Affect has been neglected in cultural theory since the late 1950s when, under the influence of mathematical theory of communication, Roman Jakobson, Claude Levi-Strauss, Roland Barthes and others begin treating cultural communication solely as a matter of encoding and decoding messages. Barthes begins his well-known article *The Photographic Message* published in 1961 in the following way:

> The press photograph is a message. Considered overall this message is formed by a source of emission, a channel of transmission and a point of reception. The source of emission is the staff of the newspaper, the group of technicians certain of whom take the photo, some of whom choose, compose and treat it, while others, finally, give it a title, a caption and a commentary. The point of reception is the public which reads the paper. As for the channel of transmission, this is the newspaper itself.[9]

Although later critics avoided such direct application of the terms of mathematical theory of communication to cultural communication, the legacy of this approach continued to linger for decades as the general paradigm of cultural criticism that even today stills focuses on the

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[9] Roland Barthes, (1961), "The Photographic Message," in Image, Music, Text, ed. Stephen Heath (New York: Hill and Wang, 1977).

concepts of “text” and “reading.” By approaching any cultural object/situation/process as “text” which is “read” by audience and/or by critics, cultural criticism privileges informational and cognitive dimensions of culture over affective, emotional, performative and experiential dimensions. Other influential approaches to cultural criticism of the last decades similarly neglect these dimensions. Neither Lacan’s psychoanalysis (1960s-) nor cognitive approach in literary studies and film theory (1980s-) deal with affect.

Post-media, or informational aesthetics I am sketching here can’t directly deal with affect either, and thus its approach will need to be supplemented by some other paradigms. But it is important to remember that we can’t do full justice to contemporary culture by considering an information worker working on his/her computer and ignoring the music he/she is likely to listen to simultaneously on CD/MP3 player. In short, we can’t just consider the office and ignore the club.

The office and the club: both rely on the same machine (digital computer). What is different between the two is software. At the office we use Web browsers, databases, spreadsheets, information managers, compilers, scripting tools, etc. At the club DJ uses mixing and music authoring software, either directly on stage, or indirectly, by playing tracks composed beforehand in the studio.

If the same data processing machine can be used for highly rational, cognitive processes (for instance, writing a computer code) and for making possible affective, bodily experience of clubbing, this means that data does not just belong to the side of cognition. If in our society data streams move our brains and our bodies, perhaps informational aesthetics will eventually learn how to think about affective data as well.