

Subjective Media: A Historic Context for New Media in Art

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Introduction

Media art has become increasingly widespread in academia, while paradoxically its status and legitimacy as a discipline is an on-going problem. Motivations for new media art include discussions on the role it plays in creating a new aesthetic for science, its importance in critical media studies, and the introduction of non-traditional media as tools for creative expression. While each of these roles will be explored here, few discussions consider the context of new media art in the whole of the 21st century as a narrative for its existence, describing it instead as an outcome of post-modernist theory. The study of new media art as a definite consequence of earlier movements in art reveals it to be part of a natural cycle between rational and subjective modes of thought.

One of the first events to bring together artists and scientists around the computer itself was Software, an exhibition organized by Jack Burnham (a media theorist and artist) in 1970 at the Jewish Museum in New York. This exhibition is now referenced as an example of the origins of media art, yet Burnham himself did not see the exhibition as a measure of how media art should be defined:

"the goal of Software is to focus our sensibilities on the fastest growing area in this culture: information processing systems. It may not be, and probably is not, the province of computers and other telecommunications devices to produce art as we know it; but they will, in fact, be instrumental in redefining the entire area of esthetic awareness." [Wardrip-Fruin 2003]

The critical forces challenging an aesthetic theory of New Media art are numerous. Burnham suggests that media art should not be defined by technology, but that it *will be regardless*. In 1987, the revolutionary and anti-political periodical *October* challenged the authority and identity of the individual artist. This was part of a post-modern trend to deconstruct "high art", to reduce the general perception that art has any intrinsic, author-centric value. As Hilton Kramer notes, this has leveled the playing field of art, but at the same time "the very notion of an independent high culture and the distinctions that separate it from popular culture and commercial entertainment have been radically eroded." [Sandler 1996]. In other words, from Kramer's perspective, the artistic avant-garde of *October* went too far, upsetting not only distinctions between classes of artists, but also eroding the value of art itself. By considering art as a system, the concept that art should be without class boundaries is incorrectly folded into the idea that art has no implicit cultural value.

Media theory, based in the social sciences, is another force which challenges New Media art. Theorists such as Walter Benjamin, Roland Barthes, Marshall McLuhan and Jean

Bauldriard, observe the influence of mass media and technology on culture; its ability to be used as a tool for consumerism. As new media art is composed of technology in practice, the hidden implication is that the media will continually "overwhelm" the media artist. This corresponds to Marshal McLuhan's maxim "the medium is the message", suggesting that meaning is no longer present at all in art, except as it exists through media.

Many of these issues are presently resolved through structuralism, which develops a theory of media in terms of its formal qualities. Lev Manovich, for example, explores the qualities and processes of media - representation, transformation, automation, and translation [Manovich 2001]. Christiane Paul, in *Digital Art*, provides an overview of media arts practice through ontological categories. While these authors are advocates of new media, the level of discourse simultaneously presents another critical challenge to new media, as meaning is still focused primarily on technological qualities. In contrast, the authority of a traditional arts program focuses on individual practice, knowledge of the history and context of movements within art, and encourages the student to explore the full range of human ideas beyond what a particular medium immediately suggests.

The goal of this research is to examine several conceptual trends in New Media art in the 20th century, to distinguish between movements and ideas within it, and to develop a theory for media art based in art philosophy - rather than social science or linguistics - in order to establish a constructive foundation for the practice, education and academic role of new media art. Rather than focus on a specialized study, the method used to accomplish this is to broadly map and contextualize new media art in the history of media theory, linguistics, and movements of 20th century art.

Media Art and Science

The rise of science, and more importantly the technological results of science, brought about major changes in the mid 20th century. This spirit of this change can be found in Steven Levy's book *Hackers*, where young computer programmers found an entirely new form of expression:

"It was a gorgeous sight. No wonder this was called LIFE - the program created life itself. To [Bill] Gosper, Conway's simulation was a form of genetic creation, without the vile secretions and emotional complications associated with the Real World."
[Levy 1984]

These experiments at MIT brought together science fiction, pinball, and NASA in a youthful exuberance and discovery that computers were much more than just another media, they were *the* media. The feeling created is that the pure mathematics of technology can tear down all walls, eliminate all boundaries, making all information free.

Since the Renaissance artists have sought to illuminate the growth of science. From Leonardo da Vinci's illustrations of machinery and anatomy, to Muybridge's cinematic study of the *Horse in Motion*, art has both incorporated technology and used it to communicate the natural world. As science is both detailed and complex, the use of interactive media enables viewers to engage in more direct learning experiences. Many

media artists go beyond illustration to incorporating the practices of science directly into their exhibitions. Bio-artists such as Ken Goldberg (Telegarden) and Amy Youngs (Hydroponic Solar Garden), grow plants and organic matter in their installations to comment on these processes as they happen. [Paul 2003]

Science is both fascinating in its beauty and disturbing in its power. Whereas pure science concerns itself with understanding the natural world, applied science considers the human use of that knowledge. For some, there is no distinction, as the purpose of science is its application by man. For others, science must be continually questioned. Many media artists create science-based installations for the purpose of criticism. Eduardo Kac, in Disembodied Cuisine, grows meat-like proteins in his exhibit, commenting on our now-mechanized food production and distribution systems.

From the 1970s, with the success of spaceflight, the internet, and computers, in the American consciousness objectivity alone is capable of solving all problems in time, whereas the ethical use of technology is considered by many not to be the role of the scientist. It is fascinating that thirty years earlier, in Europe, the Surrealist avant-garde announced that the purpose of art was to denounce logic and reason as the origins of war. What happened in this intervening time from 1940 to 1970? First, being unable to foresee and cope with Nazism, World War II brought an end to the European avant-garde. [Greeley 2006]. Propaganda speaks directly to the consumer, by-passing art altogether, and thus the function of art was diminished. Secondly, the war itself forced key artists to move from Europe to New York as artists fled the war, repositioning western art in America. Finally, the American public experienced World War II differently than Europe in that the atrocities of the war were not on native soil, so the loss in the faith of logic experienced by European artists during World War I had not yet taken place in America. At the same time, American developments in science and technology, fueled by the economics of war, led to computers, lasers, modern airplanes, and space flight in a very short span of time.

Media artists engage with science in many different ways. Some provide illustrations, others simulate nature or allow us to interact with it. Critical artists use new media to question the ethics of science. Despite the wide range of approaches available, to establish new media art only in relation to science or technology is incomplete, not because of any limit in artists' relations to science, which are both constructive and critical, but because of the limitations of science itself. Science is immense, yet many types of image-making are still considered outside its scope, including the theological, the mythological, or the imaginative views of childhood.

Dadaism, Surrealism and Activist Media

Many artists, and most media theorists, are critical of the role that New Media art plays in society. Following Roland Barthe, technology allows the wealthy to control image making through the use of mass media [Barthe 1972]. This has resulted in a generation of new media artists who choose to create works which respond by subverting the culture of visual media via hacking, tactical media, and cybernetic art. The term hacking itself has transformed over time from a playful and altruistic desire to understand the "science" of

computers without boundaries, to a subversive, even criminal reaction to its authority. This area of new media art has often been compared to Dadaism:

"Much as Dada was in part a reaction to the industrialization of warfare and the mechanical reproduction of texts and images, New Media art can be seen as a response to the information technology revolution and the digitization of cultural forms."

[Tribe a& Jana 2006]

A key distinction to be made, however, is that while a Dadaist response to war takes place through instinctive human performances, a hacktivist or cybernetic take on new media creates a self-referential conflict by both being, and rejecting, that which it is. How can a techno-critical response to media come from within media itself?

In a post-modern world, where appropriation is the norm, aesthetic responses to politics seem futile. Yet the background of media art shows that they have different goals. The ever-increasing provocation of Dadaist exhibitions which ultimately led to its downfall resemble the increasing civil militancy of the late 1960s in which tactics of peaceful demonstration and radical performance art - found to be unsuccessful in transforming the US government - ultimately led to social violence in 1969. Looking at examples of modern media arts, we find much more directed criticisms. Josh On, in *They Rule* (2001), creates maps of major corporate CEOs, their backgrounds, and records of their philanthropic donations [Paul 2003]. The nature of tactical new media is not an expectation of total revolution as it was for the Europe avant-garde, but a systematic attack on the specific actions of particular institutions.

Cybernetic media artists, such as Stelarc, take a different approach by embracing the technological as extensions of the body, creating an experience which is both fascinating yet disturbing. Compare this to Dadaism, which reacts to machinery via a return to the instinctual self (devoid of technology), or Surrealism which does so by drawing into the human subconscious - both a response to war by way of a subjective introversion [Hopkins 2004]. Artists working with cybernetic media arts simultaneously embrace and reject the technological, leading to a paradox.

For the avant-garde of the 1930s, parts of our human identity are untouched by technology and logic, to be drawn out of the self, and shared with others. In a post-modern cybernetics all parts of the human are mechanical, bringing questions on the nature of reality to the forefront. Without going into metaphysical issues, for those who accept a purely mechanical reality we are still faced with the difficulty of explaining dreams, sub-consciousness, and the symbolic level of man. At present cybernetic art, hacktivism and tactical media deal primarily with the basal functions of media-matter, namely its material substance, its boundaries, and its control, respectively. Yet while the technology of media now plays an immense role in our lives, we must remember that it still functions at a very low level in comparison to humans. Cybernetic and reactive new media art is thus a continuation of the same questions posed by Dadaism and Surrealism, namely how do we deal with technology. The only difference is that we must be even more specific about how we are like, or not like, machines.

Dadaism demonstrates that movements which are based on increasing provocation tend ultimately to their own self-destruction. The whole of art continues to press forward, beyond the reach of any particular movement, and we seek an equally lasting basis for new media arts. None the less, counter-cultural forms of media art have a unique historical importance, take on the important role of self-criticism, and raise aesthetic questions which are central to our relationship to technology.

Minimalism and Structuralism

Simultaneous with the rise of science, radical changes were taking place in the study of language as well. Wittgenstein's Tractatus presents a world view formulated entirely in propositional logic, concluding with the phrase "*What we cannot speak of we must pass over in silence.*" Reality is thus taken to be equivalent to language, the repercussions of which are widespread. By 1963, Roland Barthe and Levi-Strauss describe art as a visual language with its own signs and grammar. In 1968, Noam Chomsky formalizes language and shows it to be an aspect of all media. In 1973, Jack Burnham writes the *Structure of Art*, a survey of the grammatical qualities of the visual arts.

In New Media, structuralism takes the form of minimalism and digital abstraction. Works such as *Osmose*, invite participants to enter a virtual world with landscapes, forests and bodily organs while the form of these worlds consists of geometric shapes, particles and line segments composed of light [Paul 2003]. Based on mathematical primitives, the elemental quality of the forms presents an atomic, Democritean view of reality.

The brief history of computer graphics, beginning first with points, then lines and polygons and eventually surfaces and volumes has a natural correspondence to structuralist theory and minimalist art - except that they take place in reverse order. In computer graphics, the process is constructive, building a world from basic elements, while in minimalist art the conceptualization is deconstructive, beginning with the pictorial world of the objects and decomposing it into formal qualities and parts. [Edmonds 2002]

The end effect is that structuralism in new media arts, a found in Osmose, has the quality of being constructivist, synthetic, rather than analytical. We see a virtual world which has been created, *rebuilt*, out of elemental primitives, whereas in Minimalism it is the objective, real world whose forms have been deconstructed to reveal its formal qualities. [Stangos 1981] Structural new media art is more about the substance of virtual reality, the materiality created through simulation, than it is about the formal qualities of the media itself, i.e. the programs which make it possible.

While this is but one example, the tools for composing worlds in new media art offer a familiar set of basic elements: lines, polygons, and particle systems. Although video games offer more advanced primitives, such as characters and landscapes, these are less accessible as they are general integrated into the technology of games. Special effects for film takes these tools farther, but for the individual artist, the construction of a virtual world is still challenging and incomplete.

Structural new media art offers new insights into the nature of computing, allowing investigations of the real through simulation. Yet the quality of these investigations, their composition and form as elemental shapes, is still largely a matter of necessity rather than choice. Once the tools have evolved sufficiently, the worlds available to use may have whatever quality we choose for them, to be deconstructed in programmatic terms more akin to the digital media itself.

Subjective Media

The most significant challenge to new media art, and perhaps to art in general, is the perception among theorists that the intrinsic value of art is lost to consumer culture. Entertainment is the primary producer of art while the consumer is no longer required to be socially critical or responsible. The outlook of post-modernism, and media theory, is that in mass culture our media system is more powerful than the artist. This is re-enforced by the rapid rise in technology, its radical changes to civilization, and the influence of technology directly on art making. But is it true? Is the individual artist powerless?

Many of the most widely read primary authors in new media art are media theorists rather than art philosophers. Consider Jean Baudrillard's view of art:

"True, art is on the periphery for me. I don't really identify with it. I would even say that I have the same negative prejudice towards art that I do toward culture in general. My point of view is anthropological. From this perspective, art no longer seems to have a vital function; it is afflicted by the same fate that extinguishes value, by the same loss of transcendence." [Baudrillard 2005]

Lev Manovich, in the *Language of New Media*, presents new media art as a set of symbolic processes. Rather than describe the processes which the artist engages in, and learns through practice, Manovich describes the logical processes of the media itself - numerical representation, modularity, automation, variability, transcoding - and takes these as the features of media art. Meaning for Manovich is synonymous with the activities of the technology, and our relation to these activities.

Contrast these perspectives with the views of Leo Tolstoy:

"The activity of art is based on the fact that one, receiving through his or her sense of hearing or sight another's expression of feeling, is capable of experiencing the emotion which moved the one who expressed it." [Tolstoy 1896]

A defining paradigm for new media art thus far has been McLuhan's "media is the message". In *Understanding Media*, this is demonstrated by way of a light bulb and its role in life. Yet a light bulb has the simplest of messages, it is either on or off. While different media do affect us in radically different ways, McLuhan's point is made in a media which carries no message itself [McLuhan 1994]. Tolstoy's view is that art is *all about the message*, regardless of the media. From a humanist perspective Shakespeare's Hamlet is vastly different from a shopping list, yet both are written on the media of paper.

Subjective Media is presented as a form of new media art in which the use of visual language in media expresses poetry; poetry having its classical meaning as an expression of the human self *through* language. The goal of subjective media is not an exploration of the device, or the science which underlies it, or the structure of language around it, but the use of visual language to convey something which goes beyond syntax, which explores human subjectivity and imagination in as much as these are still a mystery. One possible source for subjective media are dreams, symbols, imagination, and childhood, many aspects of which are still inexplicable by science, and largely untouched due to our distractions with media. When we speak in words the structure of language is continually present. In poetry, and in daily use, words rise above language to convey a meaning which transcends their parts. The tools of language are no more a source for meaning in art than they are in poetry. Similarly, new media art uses language but should not focus too narrowly on its grammar.

The primary quality of art philosophy is an understanding of human nature as an awareness of the concrete reality (anthropology), followed by a shift in attention to the deeper levels of meaning, i.e. the sublime (art). This is why practice is so critical to beginners in art, where the distinction between the reality of daily life, in contrast to the formation of a personal vision and purpose to life, allows the artist to see beauty in all things. When media theory suggests that our images have all been appropriated, is this final? Or do humans continually struggle with reality, then overcome it through the imagination? The artist uses language to express the whole range of human emotions in full awareness of the problem of society, yet continues to create works of art despite this. Art is at its origin a form of poetry, and, while poetry is constrained and informed by the devices of language, it is not motivated by them.

Mapping Contexts of New Media Art

A map of movements in art, new media art, and commercial art are aligned in Figure 1 with media theory, discoveries in science, and wars of the 20th century. Those movements whose self-stated philosophies reject rational thought and logic are color coded in purple, while those that embrace reason or structuralism either openly, in technique, or in theory are coded orange and yellow.

An interesting trend is observed over the 20th century as rational and subjective modes of thought rise and fall with the onset and end of major wars, followed by reactionary movements in art. Whether this trend will continue beyond the 1970s is unknown. However, it is clear that new media art was established primarily on a rational basis, from science-based art, hacking and cybernetics, and structuralism. New media art has not yet gone through a period in which language, technology or science was not its primary source of ideas, motivating a *subjective media arts*.

The timeline also shows that, contrary to conventional views of post-modern art, the development of new media art is not chaotic, but in fact highly structured. Any perceived lack of a meta-narrative is not due to there being no narrative, but due to the fact that these narratives are now simultaneously present, each developing in parallel. These represent different ways in which to explore particular kinds of meaning, but do not

provide an overarching paradigm for media art itself. Nor do media theory or structuralism provide this foundation, as their philosophies are developed from disciplines other than art, namely social science and linguistics.

The art historian Erwin Panofsky writes that "A poem or an historical painting is, in a sense, a vehicle of communication; the Pantheon and the Milan candlesticks are, in a sense, apparatuses... in the case of a work of art, the interest in the idea is balanced, and may even be eclipsed, by an interest in form." [Panofsky 1955]. McLuhan's concept of media as message is a subtext which focuses on predominantly on the apparatus. However, given equivalent media, the idea is the primary concern of the artist.

If ideas are primary then why, ontologically, is the academic study of fine arts organized according to form, namely drawing, painting, sculpture, etc.? Panofsky continues: "the element of 'form' is present in every object without exception, for every object consists of matter and form." A particular meaning, however, is not present in every object or work. Therefore, since form *is* present in all objects, the medium of that communication is a suitable means for the organization of art as a discipline. Yet, the media is not its purpose. Unlike physics, for example, the division of the discipline of art according to its tools is a convenience, since the range of ideas in art has no bounds.

This provides a basis for a theory of New Media art as well, as media art may also be organized according to form. Manovich provides a valuable preliminary outline for these formal qualities, but goes too far in adopting McLuhan by equating the form of media with the purpose of communication. This limits the artist, who should be free to explore the entire range of human experiences. More importantly, it suggests that media is the starting point for meaning, rather than ideas.

How do we engage with technological art without becoming overwhelmed by the media itself? Picasso deals with this problem in Guernica by abandoning tools once they had exhausted their purpose.

"And his Cubism, too, once the incarnation of a vision in which many things that were otherwise quintessentially decorative were able to attain a maximum of expressiveness, has degenerated for him into a mere question of treatment. Now he seeks expression as an escape from Cubism, as a relief from it; yet he continues to finish his painting [Guernica] in its terms." [Greenberg 1961]

Picasso intentionally deconstructs his techniques in pursuit of a vision. In this space, the artist is equivalent to the message, both in conflict with the media. A central question in new media art is whether the tools may be sufficiently developed that the artist might express an infinite range of ideas without having to reinvent the basic tool each time, while purposefully restructuring the interaction to follow new directions (as is possible with painting, for example). At present, it is often necessary to programmatically *rebuild* the tool in order to pursue new paths in digitally mediated art.

The movements that led to New Media art, science-base art (covering bioart, nanotechnology, organic art, and life sciences), activist art (hacking, cybernetic art, tactical media), and structuralism (information aesthetics, database art, web art, procedural systems), represent the majority of contemporary approaches to new media, yet their range is small in comparison to the full range of human experience. While valuable for the context they provide, in the future media artists are likely to explore a much broader range of human experience. A theoretical program for new media arts, like the fine arts, enables artists to articulate any idea or message while working in the media defining the discipline.

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MEDIA THEORY

Walter Benjamin

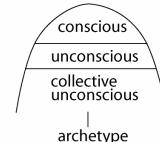
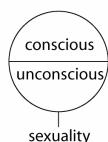
Art in the Age of Mech. Rep. (1936)

The Mechanical Bride (1951)

THEORY



Course in General Linguistics (1915)



ART

Saussure
Switzerland

1908
Henri Matisse
Guillaume Appolinaire
EXPRESSIONISM

1908-23
Pablo Picasso
CUBISM

FUTURISM
Italy

modern art

Three Essays on Sexuality
Sigmund Freud
PSYCHOANALYSIS

Concet of the Archetype (1934-38)
C.G.Jung

Russia
RUSSIAN CONSTRUCTIVISM
functionality

Spain
SURREALISM

Masson
Miro
automatic surrealism

Manifest of Surrealism (1929)
Andre Breton

Dali

parano-critic surrealism

ART MOVES
TO AMERICA

Jackson Pollock
ABSTRACT EXPRESSIONISM

no form, only expression

1954
Jasper Johns
POP ART

CONSUMER ART

ANIMATION Golden Age

Snow White (1937) Dumbo (1941)

Famous Funnies

Mickey Mouse (1931)

Superman (1938), Batman (1939)

Action Comis (1938)

COMICS Golden Age

US Senate Investigation
Comics Code Authority (CCA)
(self-policing)

POLITICS

World War I

Spain Alfonso XIII (monarchy)

Miguel Primo di Rivero

Spanish Republic

Niceto Zamora Manuel Azana

World War II

Cold War

China /
Tibet

1900

1915

1920

1925 1930

1935

1940

1945

1950

1955

SCIENCE

Quantum theory
Wave-Particle Duality
Theory of Relativity

Radio-Astronomy
Electron Microscope

Superfluidity
Nuclear Fission

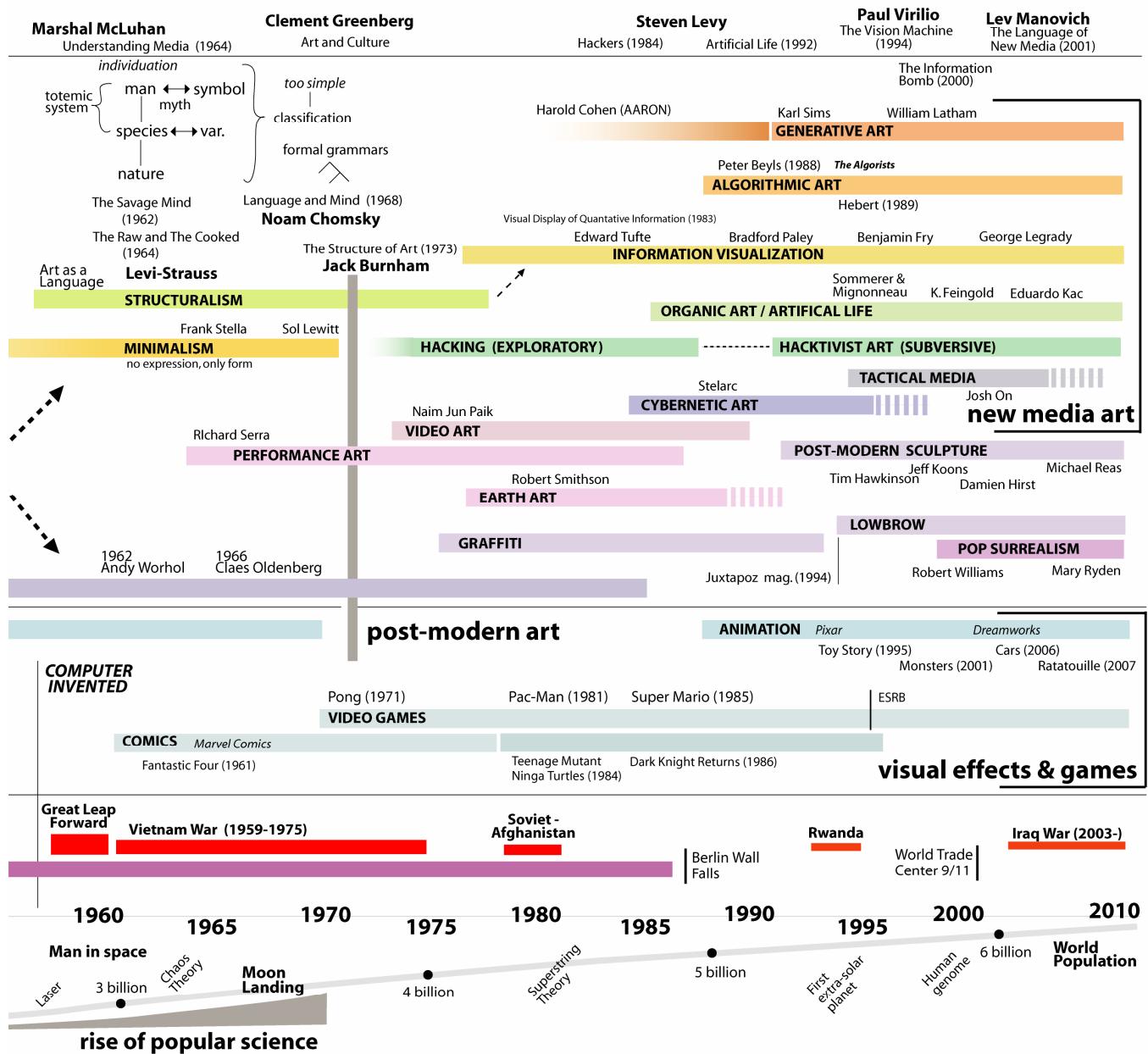
Big-Bang Theory
Quantum Electrodynamics
Structure of DNA
COMPUTER

World Population

2 billion

A Critical History of 20th Century Art

Figure 1. Timeline map of the 20th century in fine arts, new media art, media theory, science and war.



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