

Educational Institution
“Belarusian State University of Culture and Arts”

Faculty of Art Culture
Department of Theory and History of Art

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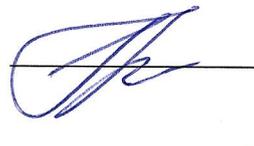
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_____ 2023

EDUCATIONAL AND METHODICAL COMPLEX
ON THE EDUCATIONAL DISCIPLINE

MEDIA TECHNOLOGIES IN ART AND MODERN ART PRACTICES

of the advanced stage of Higher Education 7-06-0213-01 Art History

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1. EXPLANATORY NOTE

The academic discipline “Media Technologies in Art and Modern Art Practices” is the leading discipline for master students in the named specialty of the advanced level of higher education “Art History” 7-06-0213-01. The educational and methodical complex of the named discipline is a complex one and includes three sections in accordance with different art-technological platforms. The discipline “Media Technologies in Art and Modern Practices” is taught simultaneously with the disciplines in Art theory and thus, it suggests the organization of educational material in such a way.

Taking into account the specificity of a figurative language of each stage of media art development, the sections of the syllabus are rather independent. The specificity of media art is based on its constant interactions between the two major systems – mass communication and man-made arts. That is why the material of the educational syllabus is closely connected with the comprehension of the two systems activity.

The peculiarity of the academic discipline “Media Technologies in Art and Modern Art Practices” lies in its interdisciplinary character. Learning main stages of media art development means theoretical understanding its works in the process of studying the disciplines “Actual Problems of Modern Art and Art Criticism”, “Comparative Art Criticism: the Practice of Scientific and Research Activity”.

According to the educational standard of higher education ESHE 1-21 80 14-2012 in specialty “Art History” and in the process of studying the academic discipline “Media Technologies in Art and Modern Art Practices” a master-student is to develop the following competences.

Special competences

SC-3. Be able to analyze media texts, independently develop media literacy skills, identify the processes of interaction of visual arts in modern art practices.

The aim of the academic discipline is to reveal the history of media art development and the development of modern art practices as a unique art process.

The objectives of the academic discipline are:

- To form the conception about the specificity of a figurative language of media art and modern art practices, their kinds, genres and typology;
- To characterize the main stylistic tendencies of media art and modern art practices of the 20th and the beginning of the 21st centuries, show their dynamics in a general cultural process;
- To single out the most important media artists.

At the end of the given academic discipline course a Master student is *to know*:

- Stylistic peculiarities and main tendencies of media art and modern art practices development;
- Innovative genres and style phenomena in media art and modern art practices;
- Main artifacts, events, names of prominent masters of media art and modern art practices.

A Master student is to be *able to*:

- Define the peculiarities of art development in the 20th and the beginning of the 21st centuries;
- Explicate the method of a comparative analysis of the synthetic and syncretic art forms of the 20th and the beginning of the 21st centuries;
- Use received knowledge in research practice.

A Master student is to be *able to use*:

- Methods of scientific research activity in the sphere of the theory and history of media art and modern art practices;
- A category apparatus and specific language of media art and modern art practices;
- Methods of art works analysis;
- Ways of presenting media art in verbal and visual forms.

The teaching of the academic discipline is more efficient to be done in the form of practical studies. The main methods (technologies) of teaching realizing the aim of learning the named discipline are a problem solving (a research method) and communicative technologies (a discussion, problem debates, round tables and others).

Studies are accompanied by audio and visual demonstrations.

The educational and methodical complex in the speciality 7-06-0213-01 “Art History” is planned for 94 hours for practical training the academic discipline “Media Technologies in Art and Modern Art Practices”. The approximate distribution of hours is 34 hours of class room activities, lectures – 14 hours and practical studies – 20 hours. The recommended form of knowledge control is a credit.

2. THEORETICAL CHAPTER

2.1 Lecture Notes

Section 1. Introduction

The understanding of media has historically changed based on audiovisual, communication capabilities, as well as changes taking place in culture. Today, “media” can be used in several meanings – a technical means, a means of mass communication, a means of mass information, an information channel. The term comes from the Latin words *media* (intermediaries, means) and *medium* (intermediary, means). The modern meaning of the term “media” is constantly being clarified both within the framework of scientific schools and in the works of individual researchers. One of the largest Russian specialists in media education A.V. Fedorov in the dictionary of 2002 indicates that the term “media” is an analogue of the terms “mass media” and “mass communication media”, which includes print, photography, radio, cinema, television, video, multimedia computer systems, including the Internet. Thus, from the meanings of the word *media*, A.V. Fedorov focuses on the meanings of “means”, “technical means”, as well as on the mass nature of the audience and the unidirectionality of the message (from the author to the audience).

In 2010, A.V. Fedorov makes an adjustment to the definition. In its new formulation, media is “mass communication media” – technical means of creating, recording, copying, replicating, storing, distributing, perceiving information and exchanging it between the subject (the author of the media text) and the object (the mass audience). Actually A.V. Fedorov removes the function of informing from the definition as no longer determining the content of communication (the importance of entertainment, training functions is enhanced), the transmission of a message is also not a defining characteristic of media in the new formulation, but only one of a number of others, such as recording, creation, storage, etc. Thus, from the meanings of the word *media*, the researcher focuses on the meanings of “means”, technical means, as well as on the mass nature of the audience and the unidirectionality of the message (from the author to the audience). This clarification reflects the changes that have occurred both in connection with the development of technologies and in connection with the changing needs of communication subjects.

Today, the possibilities of media to provide feedback from the reader (listener, viewer) to the author, communication between readers, personalize, individualize the media message, organize collaboration come to the fore.

Let’s consider a different definition of media given by the researcher of the media industry of the leading countries of the world E.L. Vartanova “Media (from Lat. *medium* – intermediate, intermediary, intermediary) – means of communication between different groups, individuals and (or) delivery of any meaningful products to the audience. Media are numerous and include mass media (newspapers, magazines, books, television, cable networks, radio, cinema), individual media of

information and data (letters, audio and video recordings on any media, CDs), as well as communication systems of society (telegraph, telephone, mail, computer networks)". In her definition, E.L. Vartanova focuses on the meaning of the intermediary (through which communication is carried out). The media in the analyzed definition is included in the media as a broader concept. In addition to the media, E.L. Vartanova includes in the media separate media of information and data, as well as communication systems of society, following the tradition laid down by M. McLuhan.

The concepts of "media art" and "media artist" entered the practice of media art in the late 1980s – later than the terms "video art", "radio art", "scan art" and others. For example, A.V. Fedorov uses the term "media arts" and defines them as "arts built on media images (that is, images created by means of (mass) communication of reality reproduction (by means of print, photography, radio, recording, cinema, television, video art, computer graphics, etc.). Close concepts: cinematography (film art), video art (video art), audiovisual arts (audiovisual arts), screen arts (screen arts)". Based on the wording, the unifying feature is not the choice of technical means used to create a work, but the specificity of imagery. The definition of A.V. Fedorov contains the phrase "media image" in need of clarification, and since we are not talking about an image, namely an image, explanations are needed to what extent mass media are able to create images.

The origins of media art can be traced to the moving image inventions of the 19th century such as the phenakistiscope (1833), the praxinoscope (1877) and Eadweard Muybridge's zoopraxiscope (1879). From the 1900s through the 1960s, various forms of kinetic and light art, from Thomas Wilfred's "Lumia" (1919) and "Clavilux" light organs to Jean Tinguely's self-destructing sculpture "Homage to New York" (1960) can be seen as progenitors of new media art.

Steve Dixon in his book "Digital Performance: New Technologies in Theatre, Dance and Performance Art" argues that the early twentieth century avant-garde art movement Futurism was the birthplace of the merging of technology and performance art. Some early examples of performance artists who experimented with then state-of-the-art lighting, film, and projection include dancers Loïe Fuller and Valentine de Saint-Point. Cartoonist Winsor McCay performed in sync with an animated Gertie the Dinosaur on tour in 1914. By the 1920s many Cabaret acts began incorporating film projection into performances.

Robert Rauschenberg's piece "Broadcast" (1959), composed of three interactive re-tunable radios and a painting, is considered one of the first examples of interactive art. German artist Wolf Vostell experimented with television sets in his (1958) installation "TV De-collages". Vostell's work influenced Nam June Paik, who created sculptural installations featuring hundreds of television sets that displayed distorted and abstract footage.

Beginning in Chicago during the 1970s, there was a surge of artists experimenting with video art and combining recent computer technology with their traditional mediums, including sculpture, photography, and graphic design. Many of the artists involved were grad students at The School of the Art Institute of Chicago,

including Kate Horsfield and Lyn Blumenthal, who co-founded the Video Data Bank in 1976. Another artists involved was Donna Cox, she collaborated with mathematician George Francis and computer scientist Ray Idaszak on the project “Venus in Time” which depicted mathematical data as 3D digital sculptures named for their similarities to Paleolithic Venus statues. In 1982 artist Ellen Sandor and her team called (art)n Laboratory created the medium called PHSCologram, which stands for photography, holography, sculpture, and computer graphics. Her visualization of the AIDS virus was depicted on the cover of IEEE Computer Graphics and Applications in November 1988.

At the University of Illinois in 1989, members of the Electronic Visualization Laboratory Carolina Cruz-Neira, Thomas DeFanti, and Daniel J. Sandin collaborated to create what is known as CAVE or Cave Automatic Virtual Environment an early virtual reality immersion using rear projection.

In 1983, Roy Ascott introduced the concept of “distributed authorship” in his worldwide telematic project “La Plissure du Texte” for Frank Popper's “Electra” at the Musée d'Art Moderne de la Ville de Paris. The development of computer graphics at the end of the 1980s and real time technologies in the 1990s combined with the spreading of the Web and the Internet favored the emergence of new and various forms of interactive art by Ken Feingold, Lynn Hershman Leeson, David Rokeby, Ken Rinaldo, Perry Hoberman, Tamas Waliczky; telematic art by Roy Ascott, Paul Sermon, Michael Bielický; Internet art by Vuk Ćosić, Jodi; virtual and immersive art by Jeffrey Shaw, Maurice Benayoun, Monika Fleischmann, and large scale urban installation by Rafael Lozano-Hemmer. In Geneva, the Centre pour l'Image Contemporaine or CIC coproduced with Centre Georges Pompidou from Paris and the Museum Ludwig in Cologne the first internet video archive of new media art.

Maurizio Bolognini's installation “Sealed Computers” (Nice, France, 1992–1998) uses computer codes to create endless flows of random images that nobody would see (images are continuously generated but they are prevented from becoming a physical artwork).

Simultaneously advances in biotechnology have also allowed artists like Eduardo Kac to begin exploring DNA and genetics as a new art medium. Influences on new media art have been the theories developed around interaction, hypertext, databases, and networks. Important thinkers in this regard have been Vannevar Bush and Theodor Nelson, whereas comparable ideas can be found in the literary works of Jorge Luis Borges, Italo Calvino, and Julio Cortázar.

Herbert Marshall McLuhan (1911 – 1980) was a Canadian philosopher, whose work is among the cornerstones of the study of media theory. McLuhan coined the expression “the medium is the message” and the term “global village”, and predicted the World Wide Web almost 30 years before it was invented. He was a fixture in media discourse in the late 1960s, though his influence began to wane in the early 1970s. In the years following his death, he continued to be a controversial figure in academic circles. However, with the arrival of the Internet and the World Wide Web, interest was renewed in his work and perspective.

Friedrich A. Kittler (1943 – 2011) was a literary scholar and a media theorist. His works relate to media, technology, and the military. Friedrich Kittler is influential in the new approach to media theory that grew popular starting in the 1980s, new media (German: “technische Medien“, which translates roughly to “technical media”). Kittler's central project is to “prove to the human sciences [...] their technological-media a priori” (Hartmut Winkler), or in his own words: “Driving the human out of the humanities”, a title that he gave a work that he published in 1980.

Kittler sees an autonomy in technology and therefore disagrees with Marshall McLuhan's reading of the media as “extensions of man”: “Media are not pseudopods for extending the human body. They follow the logic of escalation that leaves us and written history behind it”.

Consequently, he sees in writing literature, in writing programmes and in burning structures into silicon chips a complete continuum: “As we know and simply do not say, no human being writes anymore. <...> Today, human writing runs through inscriptions burnt into silicon by electronic lithography <...>. The last historic act of writing may thus have been in the late seventies when a team of Intel engineers [plotted] the hardware architecture of their first integrated microprocessor”.

Lev Manovich (1960) is an author of books on digital culture and new media, and professor of Computer Science at the Graduate Center, City University of New York. Manovich's current research and teaching focuses on digital humanities, social computing, new media art and theory, and software studies.

Manovich is also the founder and director of the Cultural Analytics Lab (called Software Studies Initiative 2007—2016), which was described in an associated press release as computational analysis of massive collections of images and video (cultural analytics). His lab was commissioned to create visualizations of cultural datasets for Google, New York Public Library, and New York's Museum of Modern Arts (MoMA).

One of his books, “The Language of New Media”, has been translated into thirteen languages. Manovich's latest academic book “Cultural Analytics” was published in 2020 by the MIT Press.

Manovich has worked with computer media as an artist, computer animator, designer, and programmer since 1984. His art projects include “Little Movies”, the first digital film project designed for the Web (1994-1997), “Freud-Lissitzky Navigator”, a conceptual software for navigating twentieth century history (1999), and “Anna and Andy”, a streaming novel (2000). He is also well known for his insightful articles, including “New Media from Borges to HTML” (2001) and “Database as Symbolic Form” (1998). In the latter article, he explains why the databases have become so popular, while juxtaposing them to concepts such as algorithms and narrative. His works have been included in many key international exhibitions of new media art. In 2002, Manovich presented his mini-retrospective at the ICA in London under the title “Lev Manovich: Adventures of Digital Cinema”.

Media art includes artworks designed and produced by means of media technologies, comprising virtual art, computer graphics, computer animation, digital art, interactive art, sound art, Internet art, video games, robotics, 3D printing, and cyborg art. The term defines itself by the thereby created artwork, which differentiates itself from that deriving from conventional visual arts (i.e. architecture, painting, sculpture, etc.). Media art has origins in the worlds of science, art, and performance. Some common themes found in new media art include databases, political and social activism, Afrofuturism, feminism, and identity, a ubiquitous theme found throughout is the incorporation of new technology into the work. The emphasis on medium is a defining feature of much contemporary art and many art schools and major universities now offer majors in “New Genres” or “New Media” and a growing number of graduate programs have emerged internationally.

New media art may involve degrees of interaction between artwork and observer or between the artist and the public, as is the case in performance art. Yet, as several theorists and curators have noted, such forms of interaction, social exchange, participation, and transformation do not distinguish new media art but rather serve as a common ground that has parallels in other strands of contemporary art practice. Such insights emphasize the forms of cultural practice that arise concurrently with emerging technological platforms, and question the focus on technological media per se. New Media art involves complex curation and preservation practices that make collecting, installing, and exhibiting the works harder than most other mediums. Many cultural centers and museums have been established to cater to the advanced needs of new media art.

Section 2. Genesis of Media Art

Theme 2.1 Technological Art at the End of 19th the First Half of the 20th Centuries

Media art did not develop in an art-historical vacuum either, but has strong connections to previous art movements, among them Dada, Fluxus, and conceptual art. The importance of these movements for digital art resides in their emphasis on formal instructions and in their focus on concept, event, and audience participation, as opposed to unified material objects. Dadaist poetry aestheticized the construction of poems out of random variations of words and lines, using formal instructions to create an artifice that resulted from an interplay of randomness and control. This idea of rules being a process for creating art has a clear connection with the algorithms that form the basis of all software and every computer operation: a procedure of formal instructions that accomplish a “result” in a finite number of steps. Just as with Dadaist poetry, the basis of any form of computer art is the instruction as a conceptual element.

The term “technological art” was proposed by the French historian and art critic Frank Popper, who has a significant authority in the field of the study of techno-cultural hybridization in the history of art. From his point of view, technological art is the result of a fundamental integration of art and technology, and not a simple aestheticization of the latter. This is one of the most important trends in the cultural dynamics of the 20th century, which was initiated by photography and cinema at the end of the previous century.

Technological art at first actively tried to bring the visual nature of cinema closer to theatrical and musical performance. It is enough to recall the performance of Alexander Scriabin’s works with film projection accompaniment (Scriabin dreamed of a theater in the spirit of Wagner’s total synesthetic theater, combining all the arts in one performance). However, the avant-garde experiments of the early 20th century brought a significant technological element to sculpture (kinetic art, light art), and to theatrical and musical creativity. Here we should mention the light-spatial modulators of Laszlo Maholy-Nagy, one of the most prominent representatives of the German Bauhaus school, as well as the Frenchman Louis Castel with experiments with light, color and (real) space that are similar in essence. Vsevolod Meyerhold in Russia, Enrico Pampolini and Filippo Marinetti in Italy, Oscar Schlemmer in Germany were pioneers of the mechanization of theatrical art and the creators of a new aesthetic platform to justify their experiments. Musical aesthetics of the early twentieth century turned to the physical basis of sound and technological means of sound production (Karlheinz Stockhausen, John Cage, Edgar Varese).

Technological art was greatly influenced by the aesthetics of the European artistic avant-garde. Modernism has fully manifested itself in the experiments of technological art. This influence can also be called decisive at the next stage of cybernetic art. The paradoxical mixture of rational and irrational allowed artists to react sensitively to technological innovations. In addition, it was in modernism that the aesthetic idea of the machine as an abstraction of technology was formed. The aesthetics of the machine has become a reinterpretation of space and time in art. The dynamics of real time, the intrinsic value of change, the involvement of the viewer in a dynamic relationship with the work, the completeness of which is manifested only in its dynamic variability – time penetrates into the work through technology. Space is also transformed into an artificial dynamic system that can sound, transform and distort with the help of light projection manipulations, come into play with time and itself. Already in technological art there has been a division between hybridization in high (avant-garde) and popular culture. Mass culture is simultaneously created and conquered by cinema during the first decades of the 20th century . The distributive power of technology then manifests itself in the

broadcasting industry and television, which, in addition to distributing cultural products, quickly come to create their own original content.

The pathos of the renewal of society was conveyed in new forms developed by representatives of Russian Constructivism. It is not by chance that contemporaries reproached constructivism for the dominance of form and experimentation with it, and not without reason. However, although the form, structure and the process of construction itself determined the specifics of constructivism, they were not an end in themselves, and in the modern history of culture, the reduction of the spectrum of its semantic meanings to purely formal innovations is considered as a reduction, as a distortion of its main intentions. The answer to the question of what they consist of is partly given by the terms themselves: construction (lat. — construction, in the sense of the device, the mutual arrangement of parts of an object); *construere* (lat. — create a construction of something, a structure). These meanings are associated with linguistic ones, where grammatical constructions are understood as combinations of words acting as one syntactic unit as something whole. And, finally, constructive in the sense of fruitful, which can be put on the basis of something. Of course, all these values indicate the decisive importance for constructivism of form, structure, construction, etc. But this is only one side. Another is that the construction procedure itself had to be carried out in accordance with the requirement “form follows function”: that is, the form had to express some new meanings and ideas, be their language. There were enough such ideas in all areas, and this expressed an attempt to develop a new world orientation, a focus on creativity and construction characteristic of constructivism. Even some laws and their application in science, technology and applied art have undergone significant changes, for example, the laws of symmetry. Geometry has become a new harmony in architecture, and this is no longer “frozen music” or “poetry in stone”.

Geometrization of construction was conceived as a departure from the old urban landscape with its domes, columns, porticos, magnificent pediments and a breakthrough into a new space. Multi-storey buildings were still in ancient Rome, but the breakthrough was in scale, in height, in the dominance of line and vertical, the creation of a new video series. In urban planning, the longitudinal arrangement, the “lowercase building” was replaced by vertical sharp-angled contours against the sky. Flat coverings, ribbon windows, focus lines have become milestones of the new time. The creativity of Constructivist artists, with all the originality and originality of each of them, reflected the desire to master and convey the spirit of the times, especially the achievements of science and technology (in particular, in the field of physics and the exploration of the Universe), and to expand the boundaries of art by strengthening conventionality, schematism of figures or generally non-objective painting, built on strict geometric forms.

Three-dimensional constructions of Aleksander Rodchenko and Varvara Stepanova are considered indicative in this regard. They created “production art”; the constructive schematicity of images was also used in book design, in a poster. It is noteworthy that Rodchenko created not only a “Hanging Structure” associated with the shape of an atom and compositions of geometric shapes, but also under the brand “Advertising designer Mayakovsky – Rodchenko” – a clear and concise advertisement for the poet’s poems “Nowhere but in Mosselprom”. It should be noted that the innovation of constructivism, with all its radicalism, was a manifestation of creativity not only of its adherents: it absorbed many meanings and ideas put forward by such innovative trends as modernism, Cubism, futurism, avant-garde, etc., whose credo was not to display and reproduce (the basic principles of art), but to transform reality, create new, striving for the ultimate goal — no more, no less — the revolutionary transformation of the world and man.

The combination of technology and art was a characteristic feature of many genres. Thus, the rebel Vsevolod Meyerhold in his “theater of revolution” to express new ideas (in particular, biomechanics) widely used elements of sports, circus and other entertainment arts. His performances were designed by Varvara Stepanova, showing genuine stage skills, engineering ingenuity. How else, than through the search for new stage means, it was possible to create such productions as Vladimir Mayakovsky’s “Mystery Buff”. Sergei Eisenstein developed a method of “mounting attractions”, which made it possible to highlight the most impressive pieces, put them side by side and mount them so that you could see the second and third plans of the frame instead of the usual video sequence, which created a new representation and enhanced the emotional and expressive impact of the picture.

The notions of interaction and “virtuality” in art were also explored early on by artists such as Marcel Duchamp and Laszlo Moholy-Nagy in relation to objects and their optical effects. Duchamp's “Rotary Glass Plates” (Precision Optics), created in 1920 with Man Ray, consisted of an optical machine and invited users to turn on the apparatus and stand at a certain distance from it in order to see the effect unfold, while the influence of Moholy-Nagy's kinetic light sculptures and his idea of virtual volumes – “the outline or trajectory presented by an object in motion” – can be traced in numerous digital installations. Duchamp's work, in particular, has been extremely influential in the realm of digital art: the shift from object to concept embodied in many of his works can be seen as a predecessor of the “virtual object” as a structure in process, and his readymades connect with the appropriation and manipulation of 'found' (copied) images that play a dominant role in many digital artworks.

Duchamp himself described his work “L.H.O.O.Q.” (1919), a reproduction of the “Mona Lisa” on which he drew a moustache and goatee, as “a combination readymade and iconoclastic dadaism”. The combinatorial and strict rule-based processes of Dadaist poetry also resurfaced in the works of “OULIPO” (Ouvroir de

Littkrature Potentielle), the French literary and artistic association founded in 1960 by Raymond Queneau and Francois Le Lionnais, who argued that all creative inspiration should be subject to calculation and become an intellectual game, and whose experimental concepts of combination compare to the reconfiguration of media elements in many later computer-generated environments.

Two conditions made Europe in the 1920s ready for the emergence of experimental film. First, the cinema matured as a medium, and highbrow resistance to the mass entertainment began to wane. Second, avant-garde movements in the visual arts flourished. The Dadaists and Surrealists in particular took to cinema. René Clair's "Entr'acte" (1924) featuring Francis Picabia, Marcel Duchamp, and Man Ray, and with music by Erik Satie, took madcap comedy into nonsequitur.

Artists Hans Richter, Jean Cocteau, Marcel Duchamp, Germaine Dulac, and Viking Eggeling all contributed Dadaist/Surrealist shorts. Fernand Léger, Dudley Murphy, and Man Ray created the film "Ballet Mécanique" (1924), which has been described as Dadaist, Cubist, or Futurist. Duchamp created the abstract film "Anémic Cinéma" (1926).

Alberto Cavalcanti directed "Rien que les heures" (1926), Walter Ruttmann directed Berlin: "Symphony of a Metropolis" (1927), and Dziga Vertov filmed "Man With a Movie Camera" (1929), experimental "city symphonies" of Paris, Berlin, and Kiev, respectively.

One famous experimental film is Luis Buñuel and Salvador Dalí's "Un chien Andalou" (1929). Hans Richter's animated shorts, Oskar Fischinger's abstract films, and Len Lye's GPO films are examples of more abstract European avant-garde films.

Working in France, another group of filmmakers also financed films through patronage and distributed them through cine-clubs, yet they were narrative films not tied to an avant-garde school. Film scholar David Bordwell has dubbed these French Impressionists, and included Abel Gance, Jean Epstein, Marcel L'Herbier, and Dimitri Kirsanoff. These films combine narrative experimentation, rhythmic editing and camerawork, and an emphasis on character subjectivity.

In 1952, the Lettrists avant-garde movement in France, caused riots at the Cannes Film Festival, when Isidore Isou's "Traité de bave et d'éternité" (also known as "Venom and Eternity") was screened. After their criticism of Charlie Chaplin at the 1952 press conference in Paris for Chaplin's "Limelight", there was a split within the movement. The Ultra-Lettrists continued to cause disruptions when they announced the death of cinema and showed their new hypergraphical techniques; the most notorious example is Guy Debord's "Howlings in favor of de Sade from 1952.

The Soviet filmmakers, too, found a counterpart to modernist painting and photography in their theories of montage. The films of Dziga Vertov, Sergei

Eisenstein, Lev Kuleshov, Alexander Dovzhenko, and Vsevolod Pudovkin were instrumental in providing an alternative model from that offered by classical Hollywood. While not experimental films per se, they contributed to the film language of the avant-garde.

Theme 2.2 Intermedia art practices

The term “intermedia” was coined by the artist and Fluxus theorist Richard (Dick) Higgins in the mid-1960s to describe interdisciplinary art forms that systematically appeared in art during the first half of the twentieth century and became a central phenomenon in the avant-garde art of the 1950s and 1960s; many historians trust him with priority in using the term in the modern sense. Higgins was the first to declare that the essence of intermedia is to overcome the division of the arts into discrete forms in accordance with the means of expression used, and thereby initiated the explanation of new artistic practices based on this principle (performance art, Fluxus, installation art, etc.).

The combinations of graphics and poetry, or painting and theater that arose at that time, could not be described by means of ordinary art historical terms, such as “synthesis of arts”. In them, the connection of different media turned out to be much stronger, these media could not be distinguished as separate and could not be perceived outside of the whole work of art. That is why a new term was needed to characterize them — “intermedia” as something existing between different expressive means. Within the framework of intermedia, new syntheses that arose between genres could create various forms that were united by a common strategy of merging different expressive means. Higgins saw this trend as the most interesting thing in contemporary art and defined the goal of the new generation of artists as crossing the boundaries of existing species, genera and genres in all possible ways and introducing what is beyond it into the sphere of art.

Since 1967, intermedia has been described by Gene Youngblood, who in his “Intermedia” column in the “Los Angeles Free Press” presented them as a way to expand people's artistic consciousness. His task is to turn all people into artists through the transfer of art from one to another. Its achievement is possible because the intermediate art will appeal to this or that person primarily through the communication channel that is available to him, and thus will be available to everyone, using different channels. Then art will develop in everyone and those channels, to the perception of which one or another person was not ready. Youngblood believed that intermedia connections would be especially effective in art associated with new media, since neither cinema nor its successors would depend on a specific form of equipment — in other words, the machine is not an expressive means, and therefore the result of perception ceases to be associated with the channel of information transmission.

Performance art is an artwork or art exhibition created through actions executed by the artist or other participants. It may be live, through documentation, spontaneously or written, presented to a public in a Fine Arts context, traditionally interdisciplinary. Also known as *artistic action*, it has been developed through the years as a genre of its own in which art is presented live. It had an important and fundamental role in 20th century avant-garde art.

It involves four basic elements: time, space, body, and presence of the artist, and the relation between the creator and the public. The actions, generally developed in art galleries and museums, can take place in the street, any kind of setting or space and during any time period. Its goal is to generate a reaction, sometimes with the support of improvisation and a sense of aesthetics. The themes are commonly linked to life experiences of the artist themselves, or the need of denunciation or social criticism and with a spirit of transformation.

The term “performance art” and “performance” became widely used in the 1970s, even though the history of performance in visual arts dates back to futurist productions and cabarets from the 1910s. The main pioneers of performance art include Carolee Schneemann, Marina Abramović, Ana Mendieta, Chris Burden, Herman Nitsch, Joseph Beuys, Nam June Paik, Yves Klein and Vito Acconci. Some of the main exponents more recently are Tania Bruguera, Abel Azcona, Regina José Galindo, Tehching Hsieh and Marta Minujin. The discipline is linked to *happening*, the Fluxus movement, body art and conceptual art. Performance art is a form of expression that was born as an alternative artistic manifestation. The discipline emerged in 1916 parallel to dadaism, under the umbrella of conceptual art. The movement was led by Tristan Tzara, one of the pioneers of Dada. Western culture theorists have set the origins of performance art in the beginnings of the 20th century, along with constructivism, Futurism and Dadaism. Dada was an important inspiration because of their poetry actions, which drifted apart from conventionalisms, and futurist artists, specially some members of Russian futurism, could also be identified as part of the starting process of performance art.

In the 1940s and 1950s, the action painting technique or movement gave artists the possibility of interpreting the canvas as an area to act in, rendering the paintings as traces of the artist's performance in the studio. According to art critic Harold Rosenberg, it was one of the initiating processes of performance art, along with abstract expressionism. Jackson Pollock is the action painter par excellence, who carried out many of his actions live. Names to be highlighted are Willem de Kooning and Franz Kline, whose work include abstract and action painting.

In the 1960s, with the purpose of evolving the generalized idea of art and with similar principles of those originary from Cabaret Voltaire or Futurism, a variety of new works, concepts and a growing number of artists led to new kinds of performance art. Movements clearly differentiated from Viennese Actionism, avant-garde performance art in New York City, process art, the evolution of The Living

Theatre or happening, but most of all the consolidation of the pioneers of performance art.

Fluxus, a Latin word that means *flow*, is a visual arts movement related to music, literature, and dance. Its most active moment was in the 1960s and 1970s. They proclaimed themselves against the traditional artistic object as a commodity and declared themselves a sociological art movement. Fluxus was informally organized in 1962 by George Maciunas (1931–1978). This movement had representation in Europe, the United States and Japan. The Fluxus movement, mostly developed in North America and Europe under the stimulus of John Cage, did not see the avant-garde as a linguistic renovation, but it sought to make a different use of the main art channels that separate themselves from specific language; it tries to be interdisciplinary and to adopt mediums and materials from different fields. Language is not the goal, but the mean for a renovation of art, seen as a global art. As well as Dada, Fluxus escaped any attempt for a definition or categorization. As one of the movement's founders, Dick Higgins, stated: Fluxus started with the work, and then came together, applying the name Fluxus to work which already existed. It was as if it started in the middle of the situation, rather than at the beginning.

Robert Filliou places Fluxus opposite to conceptual art for its direct, immediate and urgent reference to everyday life, and turns around Duchamp's proposal, who starting from Ready-made, introduced the daily into art, whereas Fluxus dissolved art into the daily, many times with small actions or performances.

John Cage (1912—1992) was an American composer, music theorist, artist, and philosopher. A pioneer of indeterminacy in music, electroacoustic music, and non-standard use of musical instruments, Cage was one of the leading figures of the post-war avant-garde. Critics have lauded him as one of the most influential composers of the 20th century. He was also instrumental in the development of modern dance, mostly through his association with choreographer Merce Cunningham (1916—2009).

Wardrip-Fruin and Montfort in “The New Media Reader” say that, “The term ‘Happening’ has been used to describe many performances and events, organized by Allan Kaprow (1927—2006) and others during the 1950s and 1960s, including a number of theatrical productions that were traditionally scripted and invited only limited audience interaction”. A happening allows the artist to experiment with the movement of the body, recorded sounds, written and talked texts, and even smells. One of Kaprow's first works was *Happenings in the New York Scene*, written in 1961. Allan Kaprow's happenings turned the public into interpreters. Often the spectators became an active part of the act without realizing it. Other actors who created happenings were Jim Dine, Claes Oldenburg, Robert Whitman and Wolf Vostell: *Theater is in the Street* (Paris, 1958).

Joseph Beuys (1921—1986) was a German Fluxus, happening, performance artist, painter, sculptor, medallist and installation artist. In 1962 his actions alongside the Fluxus neodadaist movement started, group in which he ended up becoming the most important member. His most relevant achievement was his socialization of art, making it more accessible for every kind of public. In “How to Explain Pictures to a Dead Hare” (1965) he covered his face with honey and gold leaf and explained his work to a dead hare that lay in his arms. In this work he linked spacial and sculptural, linguistic and sonorous factors to the artist's figure, to his bodily gesture, to the conscience of a communicator whose receptor is an animal. Beuys acted as a shaman with healing and saving powers toward the society that he considered dead. In 1974 he carried out the performance “I Like America and America Likes Me” where Beuys, a coyote and materials such as paper, felt and thatch constituted the vehicle for its creation. He lived with the coyote for three days. He piled United States newspapers, a symbol of capitalism. With time, the tolerance between Beuys and the coyote grew and he ended up hugging the animal. Beuys repeats many elements used in other works. Objects that differ from Duchamp's ready-mades, not for their poor and ephemerality, but because they are part of Beuys's own life, who placed them after living with them and leaving his mark on them. Many have an autobiographical meaning, like the honey or the grease used by the tartars who saved in World War Two. In 1970 he made his “Felt Suit”. Also in 1970, Beuys taught sculpture in the Kunstakademie Düsseldorf. In 1979, the Solomon R. Guggenheim Museum of New York City exhibited a retrospective of his work from the 1940s to 1970.

Installation art is an artistic genre of three-dimensional works that are often site-specific and designed to transform the perception of a space. Generally, the term is applied to interior spaces, whereas exterior interventions are often called public art, land art or art intervention; however, the boundaries between these terms overlap.

Installation art came to prominence in the 1970s but its roots can be identified in earlier artists such as Marcel Duchamp and his use of the readymade and Kurt Schwitters' “Merz” art objects, rather than more traditional craft based sculpture. The “intention” of the artist is paramount in much later installation art whose roots lie in the conceptual art of the 1960s. This again is a departure from traditional sculpture which places its focus on form. Early non-Western installation art includes events staged by the Gutai group in Japan starting in 1954, which influenced American installation pioneers like Allan Kaprow. Wolf Vostell shows his installation “6 TV Dé-coll/age” in 1963 at the Smolin Gallery in New York.

Installation as nomenclature for a specific form of art came into use fairly recently; its first use as documented by the “Oxford English Dictionary” was in 1969. It was coined in this context, in reference to a form of art that had arguably existed since prehistory but was not regarded as a discrete category until the mid-twentieth century. Allan Kaprow used the term “Environment” in 1958 to describe

his transformed indoor spaces; this later joined such terms as “project art” and “temporary art”.

Essentially, installation/environmental art takes into account a broader sensory experience, rather than floating framed points of focus on a “neutral” wall or displaying isolated objects (literally) on a pedestal. This may leave space and time as its only dimensional constants, implying dissolution of the line between “art” and “life”; Kaprow noted that “if we bypass 'art' and take nature itself as a model or point of departure, we may be able to devise a different kind of art... out of the sensory stuff of ordinary life”.

The conscious act of artistically addressing all the senses with regard to a total experience made a resounding debut in 1849 when Richard Wagner conceived of a “Gesamtkunstwerk”, or an operatic work for the stage that drew inspiration from ancient Greek theater in its inclusion of all the major art forms: painting, writing, music, etc. In devising operatic works to commandeer the audience’s senses, Wagner left nothing unobserved: architecture, ambience, and even the audience itself were considered and manipulated in order to achieve a state of total artistic immersion. In the book “Themes in Contemporary Art”, it is suggested that “installations in the 1980s and 1990s were increasingly characterized by networks of operations involving the interaction among complex architectural settings, environmental sites and extensive use of everyday objects in ordinary contexts. With the advent of video in 1965, a concurrent strand of installation evolved through the use of new and ever-changing technologies, and what had been simple video installations expanded to include complex interactive, multimedia and virtual reality environments”.

In “Art and Objecthood”, Michael Fried derisively labels art that acknowledges the viewer as “theatrical”. There is a strong parallel between installation and theater: both play to a viewer who is expected to be at once immersed in the sensory/narrative experience that surrounds him and maintain a degree of self-identity as a viewer. The traditional theater-goer does not forget that they have come in from outside to sit and take in a created experience; a trademark of installation art has been the curious and eager viewer, still aware that they are in an exhibition setting and tentatively exploring the novel universe of the installation.

The artist and critic Ilya Kabakov (1933—2023) mentions this essential phenomenon in the introduction to his lectures “On the ‘Total’ Installation”: “[One] is simultaneously both a 'victim' and a viewer, who on the one hand surveys and evaluates the installation, and on the other, follows those associations, recollections which arise in him[;] he is overcome by the intense atmosphere of the total illusion”. Here installation art bestows an unprecedented importance on the observer's inclusion in that which he observes. The expectations and social habits that the viewer takes with him into the space of the installation will remain with him as he enters, to be either applied or negated once he has taken in the new environment.

What is common to nearly all installation art is a consideration of the experience in toto and the problems it may present, namely the constant conflict between disinterested criticism and sympathetic involvement. Television and video offer somewhat immersive experiences, but their unrelenting control over the rhythm of passing time and the arrangement of images precludes an intimately personal viewing experience. Ultimately, the only things a viewer can be assured of when experiencing the work are his own thoughts and preconceptions and the basic rules of space and time. All else may be molded by the artist's hands.

The central importance of the subjective point of view when experiencing installation art, points toward a disregard for traditional Platonic image theory. In effect, the entire installation adopts the character of the simulacrum or flawed statue: it neglects any ideal form in favor of optimizing its direct appearance to the observer. Installation art operates fully within the realm of sensory perception, in a sense “installing” the viewer into an artificial system with an appeal to his subjective perception as its ultimate goal.

An interactive installation frequently involves the audience acting on the work of art or the piece responding to users' activity. There are several kinds of interactive installations that artists produce, these include web-based installations (e.g., “Telegarden”), gallery-based installations, digital-based installations, electronic-based installations, mobile-based installations, etc. Interactive installations appeared mostly at end of the 1980s (“Legible City” by Jeffrey Shaw, “La plume” by Edmond Couchot, Michel Bret...) and became a genre during the 1990s, when artists became particularly interested in using the participation of the audiences to activate and reveal the meaning of the installation.

Section 3. Media Art

Theme 3.1 Video Performance: the Main Development Tendencies

Video art and performance art are two art practices that emerged simultaneously in the 1960s as a countercultural practice. These are two forms of countercultural practices that opposed traditional ideas about art and its formats: painting, sculpture. The main difference between a video performance and a performance is the presence of a video camera as an active participant. The artist works with it, uses it as a tool and a guide for communication with the viewer.

The work “Happening with a Button” by Nam June Paik (1932—2006) is considered one of the first video art works, and it is directly related to performance. Observing the precepts of Fluxus, Paik made his performance simple and understandable. In this work, the artist zips and unbuttons his jacket. A small sketch about the transparency of the boundaries between art and life, which Paik shot without anyone's help.

Bruce Nauman (born 1941) also created all his works independently in the late 1960s. He came to the workshop and acted in front of the camera. Nauman says: “I am an artist. I’m in my workshop. Everything I do is art”. Most often, he filmed a series of simple movements: walking in a contrapost, lifting first one side of the body, then the other, like an animated antique statue. His videos lasted about an hour, because one film was enough for that time. This is an hour of simple, but demanding serious concentration of actions. For the viewer, it looks like an absurd game, but here everything is more methodical and serious. The artist comes up with the rules of this game for himself, a formal frame and adheres to it.

Nam June Paik was a South Korean performance artist, composer and video artist from the second half of the 20th century. He studied music and art history in the University of Tokyo. Later, in 1956, he traveled to Germany, where he studied Music Theory in Munich, then continued in Cologne in the Freiburg conservatory. While studying in Germany, Paik met the composers Karlheinz Stockhausen and John Cage and the conceptual artists Sharon Grace as well as George Maciunas, Joseph Beuys and Wolf Vostell and was from 1962 on, a member of the experimental art movement Fluxus. Nam June Paik then began participating in the Neo-Dada art movement, known as Fluxus, which was inspired by the composer John Cage and his use of everyday sounds and noises in his music. He was mates with Yoko Ono as a member of Fluxus.

Wolf Vostell (1932—1998) was a German artist, one of the most representative of the second half of the 20th century, who worked with various mediums and techniques such as painting, sculpture, installation, decollage, videoart, happening and Fluxus.

Vito Acconci (1940—2017) was an influential American performance, video and installation artist, whose diverse practice eventually included sculpture, architectural design, and landscape design. His foundational performance and video art was characterized by “existential unease”, exhibitionism, discomfort, transgression and provocation, as well as wit and audacity, and often involved crossing boundaries such as public–private, consensual–nonconsensual, and real world–art world. His work is considered to have influenced artists including Laurie Anderson, Karen Finley, Bruce Nauman, and Tracey Emin, among others. Acconci was initially interested in radical poetry, but by the late 1960s, he began creating Situationist-influenced performances in the street or for small audiences that explored the body and public space. Two of his most famous pieces were “Following Piece” (1969), in which he selected random passersby on New York City streets and followed them for as long as he was able, and “Seedbed” (1972), in which he claimed that he masturbated while under a temporary floor at the Sonnabend Gallery, as visitors walked above and heard him speaking.

Chris Burden (1946—2015) was an American artist working in performance, sculpture and installation art. Burden became known in the 1970s for his performance art works, including “Shoot” (1971), in which he arranged for a friend to shoot him in the arm with a small-caliber rifle. A prolific artist, Burden created many well-known installations, public artworks and sculptures before his death in

2015. Burden began to work in performance art in the early 1970s. He made a series of controversial performances in which the idea of personal danger as artistic expression was central. His first significant performance work, “Five Day Locker Piece” (1971), was created for his master's thesis at the University of California, Irvine, and involved his being locked in a locker for five days.

Dennis Oppenheim (1938—2011) was an American conceptual artist, performance artist, earth artist, sculptor and photographer. Dennis Oppenheim's early artistic practice is an epistemological questioning about the nature of art, the making of art and the definition of art: a meta-art which arose when strategies of the Minimalists were expanded to focus on site and context. As well as an aesthetic agenda, the work progressed from perceptions of the physical properties of the gallery to the social and political context, largely taking the form of permanent public sculpture in the last two decades of a highly prolific career, whose diversity could exasperate his critics.

Yayoi Kusama (born 1929) is a Japanese artist who, throughout her career, has worked with a great variety of media including: sculpture, installation, painting, performance, film, fashion, poetry, fiction, and other arts; the majority of them exhibited her interest in psychedelia, repetition and patterns. Kusama is a pioneer of the pop art, minimalism and feminist art movements and influenced her coetaneous, Andy Warhol and Claes Oldenburg. She has been acknowledged as one of the most important living artists to come out of Japan and a very relevant voice in avant garde art.

In the 1970s, artists that had derived to works related to performance art evolved and consolidated themselves as artists with performance art as their main discipline, deriving into installations created through performance, video performance, or collective actions, or in the context of a socio-historical and political context.

In the early 1970s the use of video format by performance artists was consolidated. Some exhibitions by Joan Jonas and Vito Acconci were made entirely of video, activated by previous performative processes. In this decade, various books that talked about the use of the means of communication, video and cinema by performance artists, like “Expanded Cinema”, by Gene Youngblood, were published. One of the main artists who used video and performance, with notorious audiovisual installations, is the South Korean artist Nam June Paik, who in the early 1960s had already been in the Fluxus movement until becoming a media artist and evolving into the audiovisual installations he is known for.

Carolee Schneemann's and Robert Whitman's 1960s work regarding their video-performances must be taken into consideration as well. Both were pioneers of performance art, turning it into an independent art form in the early seventies.

Joan Jonas started to include video in her experimental performances in 1972, while Bruce Nauman scenified his acts to be directly recorded on video. Nauman is an American multimedia artist, whose sculptures, videos, graphic work and performances have helped diversify and develop culture from the 1960s on. His unsettling artworks emphasized the conceptual nature of art and the creation process.

His priority is the idea and the creative process over the end result. His art uses an incredible array of materials and especially his own body.

Gilbert and George are Italian artist Gilbert Proesch (born 1943) and English artist George Passmore (born 1942), who have developed their work inside conceptual art, performance and body art. They were best known for their live-sculpture acts. One of their first makings was “The Singing Sculpture”, where the artists sang and danced “Underneath the Arches”, a song from the 1930s. Since then they have forged a solid reputation as live-sculptures, making themselves works of art, exhibited in front of spectators through diverse time intervals. They usually appear dressed in suits and ties, adopting diverse postures that they maintain without moving, though sometimes they also move and read a text, and occasionally they appear in assemblies or artistic installations. Apart from their sculptures, Gilbert and George have also made pictorial works, collages and photomontages, where they pictured themselves next to diverse objects from their immediate surroundings, with references to urban culture and a strong content; they addressed topics such as sex, race, death and HIV, religion or politics, critiquing many times the British government and the established power. The group's most prolific and ambitious work was “Jack Freak Pictures”, where they had a constant presence of the colors red, white and blue in the Union Jack. Gilbert and George have exhibited their work in museums and galleries around the world, like the Stedelijk van Abbemuseum of Eindhoven (1980), the Hayward Gallery in London (1987), and the Tate Modern (2007). They have participated in the Venice Biennale. In 1986 they won the Turner Prize.

The works by performance artists after 1968 showed many times influences from the political and cultural situation that year. Barbara T. Smith with “Ritual Meal” (1969) was at the vanguard of body and scenic feminist art in the seventies, which included, amongst others, Carolee Schneemann and Joan Jonas. These, along with Yoko Ono, Joseph Beuys, Nam June Paik, Wolf Vostell, Allan Kaprow, Vito Acconci, Chris Burden and Dennis Oppenheim were pioneers in the relationship between body art and performance art, as well as the Zaj collective in Spain with Esther Ferrer and Juan Hidalgo.

Barbara Smith (born 1946) is an artist and United States activist. She is one of the main African-American exponents of feminism in the United States. In the beginning of the 1970s she worked as a teacher, writer and defender of the black feminism current. She has taught at numerous colleges and universities in the last five years. Smith's essays, reviews, articles, short stories and literary criticism have appeared in a range of publications, including “The New York Times”, “The Guardian”, “The Village Voice” and “The Nation”.

Carolee Schneemann (1939—2019) was an American visual experimental artist, known for her multi-media works on the body, narrative, sexuality and gender. She created pieces such as “Meat Joy” (1964) and “Interior Scroll” (1975). Schneemann considered her body a surface for work. She described herself as a “painter who has left the canvas to activate the real space and the lived time”.

Joan Jonas (born 1936) is an American visual artist and a pioneer of video and performance art, who is one of the most important female artists to emerge in the late 1960s and early 1970s. Jonas' projects and experiments provided the foundation on which much video performance art would be based. Her influences also extended to conceptual art, theatre, performance art and other visual media. She lives and works in New York and Nova Scotia, Canada. Immersed in New York's downtown art scene of the 1960s, Jonas studied with the choreographer Trisha Brown for two years. Jonas also worked with choreographers Yvonne Rainer and Steve Paxton.

Yoko Ono (born 1933) was part of the avant-garde movement of the 1960s. She was part of the Fluxus movement. She is known for her performance art pieces in the late 1960s, works such as "Cut Piece", where visitors could intervene in her body until she was left naked. One of her best known pieces is "Wall piece for orchestra" (1962).

In the mid-1970s, Ulay (born 1943) and Marina Abramović (born 1946) founded the collective "The Other" in the city of Amsterdam. When Abramović and Ulay started their collaboration. The main concepts they explored were the ego and artistic identity. This was the start of a decade of collaborative work. Both artists were interested in the tradition of their cultural heritage and the individual's desire for rituals. They dressed and behaved as one, and created a relation of absolute confidence. They created a series of works in which their bodies created additional spaces for the audience's interaction. In "Relation in Space" they ran around the room, two bodies like two planets, meshing masculine and feminine energies into a third component they called "that self". "Relation in Movement" (1976) had the couple driving their car inside the museum, doing 365 spins. A black liquid dripped out of the car, forming a sculpture, and each round represented a year. After this, they created "Death Self", where both of them united their lips and inspired the air expired by the other one until they used up all oxygen. Exactly 17 minutes after the start of the performance, both of them fell unconscious, due to their lungs filling with carbon dioxide. This piece explored the idea of the ability of a person to absorb the life out of another one, changing them and destroying them. In 1988, after some years of a tense relationship, Abramović and Ulay decided to make a spiritual travel that would put an end to the collective. They walked along the Great Wall of China, starting on opposite ends and finding each other halfway. Abramović conceived this walk on a dream, and it gave her what she saw as an appropriate and romantic ending to the relationship full of mysticism, energy and attraction. Ulay started on the Gobi desert and Abramovic in the Yellow sea. Each one of them walked 2500 kilometres, found each other in the middle and said goodbye.

In the late 1990s and into the 2000s, a number of artists incorporated technologies such as the World Wide Web, digital video, webcams, and streaming media, into performance artworks. Artists such as Coco Fusco, Shu Lea Cheang, and Prema Murthy produced performance art that drew attention to the role of gender, race, colonialism, and the body in relation to the Internet. Other artists, such as "Critical Art Ensemble", "Electronic Disturbance Theater" and "Yes, Men" used

digital technologies associated with hacktivism and interventionism to raise political issues concerning new forms of capitalism and consumerism.

In the second half of the decade, computer-aided forms of performance art began to take place. Many of these works led to the development of algorithmic art, generative art, and robotic art, in which the computer itself, or a computer-controlled robot, becomes the performer.

Coco Fusco is an interdisciplinary Cuban-American artist, writer and curator who lives and works in the United States. Her artistic career began in 1988. In her work, she explores topics such as identity, race, power and gender through performance. She also makes videos, interactive installations and critical writing.

Theme 3.2 Single-channel video: the main development tendencies

Single-channel video is a video art work using a single electronic source, presented and exposed from a single playback device. Electronic sources can be a videocassette of any format, a DVD or moving images created on a computer using a suitable playback device (for example, a video recorder, DVD player or computer), and displayed using a TV, a monitor, projector, or other on-screen device. Historically, video art was limited to unedited videos displayed on a television monitor in a gallery, and conceptually contrasted with both broadcast television and cinema projections in cinemas. With the development of technology, the ability to edit and display video art provided more variations, and multi-channel video works, as well as multi-channel and multi-layer video installations became possible. However, single-channel video works are still produced for various aesthetic and conceptual reasons, and the term now usually refers to a single image on a monitor or projection, regardless of the image source or production.

Video art is often said to have begun when Paik used his new “Sony Portapak” to shoot footage of Pope Paul VI’s procession through New York City in the autumn of 1965. Later that same day, across town in a Greenwich Village cafe, Paik played the tapes and video art was born. Prior to the introduction of consumer video equipment, moving image production was only available non-commercially via 8mm film and 16mm film. After the Portapak’s introduction and its subsequent update every few years, many artists began exploring the new technology.

Many of the early prominent video artists were those involved with concurrent movements in conceptual art, performance, and experimental film. These include Americans Vito Acconci, Valie Export, John Baldessari, Peter Campus, Doris Totten Chase, Maureen Connor, Norman Cowie, Dimitri Devyatkin, Frank Gillette, Dan Graham, Gary Hill, Joan Jonas, Bruce Nauman, Nam June Paik, Bill Viola, Shigeko Kubota, Martha Rosler, William Wegman, and many others. There were also those such as Steina and Woody Vasulka who were interested in the formal qualities of video and employed video synthesizers to create abstract works. Kate Craig, Vera Frenkel and Michael Snow were important to the development of video art in Canada.

Much video art in the medium's heyday experimented formally with the limitations of the video format. For example, American artist Peter Campus' "Double Vision" combined the video signals from two Sony Portapak's through an electronic mixer, resulting in a distorted and radically dissonant image. Another representative piece, Joan Jonas' "Vertical Roll", involved recording previously-recorded material of Jonas dancing while playing the videos back on a television, resulting in a layered and complex representation of mediation.

Much video art in the United States was produced out of New York City, with "The Kitchen", founded in 1972 by Steina (born 1940) and Woody Vasulka (born 1937) (and assisted by video director Dimitri Devyatkin and Shridhar Bapat), serving as a nexus for many young artists. An early multi-channel video art work (using several monitors or screens) was "Wipe Cycle" by Ira Schneider and Frank Gillette. "Wipe Cycle" was first exhibited at the Howard Wise Gallery in New York in 1969 as part of an exhibition titled "TV as a Creative Medium". An installation of nine television screens, "Wipe Cycle" combined live images of gallery visitors, found footage from commercial television, and shots from pre-recorded tapes. The material was alternated from one monitor to the next in an elaborate choreography.

On the West coast, the San Jose State television studios in 1970, Willoughby Sharp began the "Videoviews" series of videotaped dialogues with artists. The "Videoviews" series consists of Sharps' dialogues with Bruce Nauman (1970), Joseph Beuys (1972), Vito Acconci (1973), Chris Burden (1973), Lowell Darling (1974), and Dennis Oppenheim (1974). Also in 1970, Sharp curated "Body Works", an exhibition of video works by Vito Acconci, Terry Fox, Richard Serra, Keith Sonnier, Dennis Oppenheim and William Wegman which was presented at Tom Marioni's Museum of Conceptual Art, San Francisco, California.

In Europe, Valie Export's groundbreaking video piece, "Facing a Family" (1971) was one of the first instances of television intervention and broadcasting video art. The video, originally broadcast on the Austrian television program "Kontakte" February 2, 1971, shows a bourgeois Austrian family watching TV while eating dinner, creating a mirroring effect for many members of the audience who were doing the same thing. Export believed the television could complicate the relationship between subject, spectator, and television. In the United Kingdom David Hall's "TV Interruptions" (1971) were transmitted intentionally unannounced and uncredited on Scottish TV, the first artist interventions on British television.

As the prices of editing software decreased, the access the general public had to utilize these technologies increased. Video editing software became so readily available that it changed the way digital media artists and video artists interacted with the mediums. Different themes emerged and were explored in the artists work, such as interactivity and nonlinearity. Criticisms of the editing software focused on the freedom that was created for the artists through the technology, but not for the audience. Some artists combined physical and digital techniques to allow their audience to physically explore the digital work. An example of this is Jeffrey Shaw's "Legible City" (1988-91). In this piece the "audience" rides a stationary bicycle through a virtual images of Manhattan, Amsterdam, and Karlsruhe. The images

change depending on the direction of the bike handles, and the speed of the pedaler. This created a unique virtual experience for every participant.

As technology and editing techniques have evolved since the emergence of video as an art form, artists have been able to experiment more with video art without using any of their own content. Marco Brambilla's "Civilization" (2008) shows this technique. Brambilla attempts to make a video version of a collage, or a "video mural" by combining various clips from movies, and editing them to portray heaven and hell.

There are artists today who have changed the way video art is perceived and viewed. In 2003, Kalup Linzy created "Conversations Wit De Churen II: All My Churen", a soap opera satire that has been credited as creating the video and performance sub-genre. Although Linzy's work is genre defying his work has been a major contribution to the medium. Ryan Trecartin, and experimental young video-artist, uses color, editing techniques and bizarre acting to portray what "The New Yorker" calls "a cultural watershed". Trecartin played with the portrayal of identity and ended up producing characters who "can be many people at the same time". When asked about his characters, Trecartin explained that he visualized that each person's identity was made up of "areas" and that they could all be very different from each other and be expressed at different times. Ryan Trecartin is an innovative artist who has been said to have "changed the way we engage with the world and with one another" through video art. A series of videos made by Trecartin titled I-BE-AREA displayed this, one example is I-BE-AREA (Pasta and Wendy M-PEGgy), which was made public in 2008, which portrays a character named Wendy who behaves erratically. When asked about his characters, Trecartin explained that he visualized that each person's identity was made up of "areas" and that they could all be very different from each other and be expressed at different times. Ryan Trecartin is an innovative artist who has been said to have "changed the way we engage with the world and with one another" through video art. In 2008, "New York Times" Holland Cotter writes, "A big difference between his work and Mr. Trecartin's is in the degree of digital engagement. Mr. Trecartin goes wild with editing bells and whistles; Mr. Linzy does not. The plainness and occasional clunkiness of his video technique is one reason the Braswell serial ends up touching in a way that Mr. Trecartin's buzzed-up narratives rarely are. For all their raunchy hilarity Mr. Linzy's characters are more than cartoons; 'All My Churen' is a family-values story that has a lot to do with life".

Theme 3.4 Video installation: the main development tendencies

Video installation is a form of contemporary art that combines video technology with installation and uses all aspects of the created space to influence the viewer. The origins of video installation can be traced back to the 1970s, when video art was born, but its popularity has increased in recent years due to the advent of more accessible digital video technology. In the late 2010s, video installation is

widespread everywhere and is found in a variety of environments: from galleries and museums to objects in urban or industrial landscapes.

One of the main principles that artists follow when creating a video installation is the use of space as a key element of the narrative structure. Thanks to this, the familiar linear cinematic narrative is distributed throughout the space, providing an immersive effect. The viewer plays an active role, since it is he who determines the narrative sequence, moving forward in an organized space. Sometimes the idea of audience participation expands the work to an interactive video installation. Also, the video sequence can be displayed in such a way that the viewer becomes part of the plot as a movie character.

In the late 1950s and early 1960s, artists Wolf Vostell and Edward Kienholz began experimenting with televisions by using them in their happenings and assemblages respectively. In March 1963, Nam June Paik's debuted his video sculpture entitled "Music/Electronic Television" at the Parnass Gallery in Wupertal, which used 13 altered televisions. In May 1963 Wolf Vostell shows his installation "6 TV-Dé-coll/age" at the Smolin Gallery in New York utilized six televisions, each with an anomaly. Shigeo Kubota was also an innovator in the use of video in sculptural form. Her "Duchampiana: Nude Descending a Staircase" was the first video sculpture acquired by the Museum of Modern Art. This work is a reference to Marcel Duchamp's "Nude Descending a Staircase, No.2" (1912). Video sculpturist are becoming influential among early 21st century artists. One of Paik's video sculptures in which the six windows of a 1936 Chrysler Airstream were replaced with video monitors sold for \$75,000 in 2002. Charlotte Moorman was a notable subject of video sculptures as a renowned topless cellist.

Other Americans include Bill Viola (born 1951), Gary Hill (born 1951) and Tony Oursler (born 1957). Bill Viola is considered a master of the medium. His 1997 "Survey" at the Whitney Museum in NY, along with the 1994-95 Gary Hill survey created by the Henry Art Gallery, Seattle, and traveling to Philadelphia, New York, Los Angeles and Kansas City, amounted to a watershed mark in the history of video installation art marking both a period on the sentence of the first generation and a beginning of the next.

Viola's art deals largely with the central themes of human consciousness and experience - birth, death, love, emotion, and a kind of humanist spirituality. Throughout his career he has drawn meaning and inspiration from his deep interest in mystical traditions, especially Zen Buddhism, Christian mysticism and Islamic Sufism, often evident in the transcendental quality of some of his works. Equally, the subject matter and manner of western medieval and renaissance devotional art have informed his aesthetic.

An ongoing theme that he constantly explores is dualism, or the idea that comprehension of a subject is impossible unless its opposite is known. For example, a lot of his work has themes such as life and death, light and dark, stressed and calm, or loud and quiet.

His work can be divided into three types, conceptual, visual, and a unique combination of the two. According to art critic James Gardner of the National

Review, Viola's conceptual work is forgettable just like most video art. However, others have different opinions. On the other hand, Gardner feels that Viola's visual work such as "The Veiling", and his combination of both the conceptual and visual such as "The Crossing" are impressive and memorable.

Viola's work often exhibits a painterly quality, his use of ultra-slow motion video encouraging the viewer to sink into the image and connect deeply to the meanings contained within it. This quality makes his work perhaps unusually accessible within a contemporary art context. As a consequence, his work often receives mixed reviews from critics, some of whom have noted a tendency toward grandiosity and obviousness in some of his work. Yet it is this very ambitiousness, his striving toward meaning, and attempts to deal with the big themes of human life, that also make his work so clearly appreciated by other critics, his audiences and collectors.

His early work established his fascination with issues that continue to inform his work today. In particular, Viola's obsession with capturing the essence of emotion through recording of its extreme display began at least as early as his 1976 work, "The Space Between the Teeth", a video of himself screaming, and continues to this day with such works as the 45-second "Silent Mountain" (2001), which shows two actors in states of anguish.

If Viola's depictions of emotional states with no objective correlative — emotional states for which the viewer has no external object or event to understand them by—are one feature of many of his works, another, which has come to the forefront, is his reference to medieval and classical depictions of emotion. Most immediately, his subdued "Catherine's Room" 2001, has many scene by scene parallels with Andrea di Bartolo's 1393 St. Catherine of Siena Praying.

Viola's work has received critical accolades. Critic Marjorie Perloff singles him out for praise. Writing at length about the necessity of poetic works responding to and taking advantage of contemporary computer technologies, Perloff sees Viola as an example of how new technology — in his case, the video camera—can create entirely new aesthetic criteria and possibilities that did not exist in previous incarnations of the genre — in this case, theater.

Gary Hill, another master of the medium, has created quite complex and innovative video installations using combinations of stripped down monitors, projections and a range of technologies (from laser disk to DVD and new digital devices) so that the spectator can interact with the work. For instance in the 1992 piece "Tall Ships", commissioned by Jan Hoet for Documenta 9, the audience enters a dark hall-like space where ghostly images of seated figures are projected onto a wall. The approach of a viewer causes a seated figure to stand up and move forward toward the viewer, creating an eerie effect of the dead in the underworld (rather suggestive of Odysseus' descent into the Underworld in "The Odyssey").

Gary Hill's work has often been discussed in relation to his incorporation of language/text in video and installation, most evident in a work like "Incidence of Catastrophe"(1987–88). In the late 1960s, he began making metal sculpture and, in Woodstock, New York, engaged by wire sculpture's sounds, explored extensions

into electronic sound, video cameras and tape, playback/feedback, video synthesizers, sound synthesizers, installation-like constructions, video installations, interactive art and public interventions. Later in the 1970s, living in Barrytown, New York, interacting with poets/artists George Quasha and Charles Stein, he extended his growing interest in language to a level of poetics and complex text, as well as performance art and collaboration. Initially “language” for him was not specifically words but the experience of a speaking that emerged inside electronic space (certain sounds “seemed close to human voices”), which he called “electronic linguistics” (first in the transitional non-verbal piece, “Electronic Linguistic”[1977]). From that point, irrespective of whether a given piece uses text, his work in particular instances inquires into the nature of language as intrinsic to electronic/digital technology as art medium. Verbal language soon enters this electronic focus co-performatively, as an intensification of a dialogue with and within the medium, yet with a new language force all its own, its own unprecedented poetics. Highly realized single-channel works in this process include: “Processual Video” (1980), “Videograms” (1980–81), and “Happenstance (part one of many parts)” (1982–83), another stage of the dialogue with technology as a language site where machines talk back. Here the artist's path moves to the celebrated language-intensive works of the 1980s: “Around & About” (1980), “Primarily Speaking” (1981–83), “Why Do Things Get in a Muddle? (Come on Petunia)” (1984), “URA ARU (the backside exists)” (1985–86), and “Incidence of Catastrophe”(1987–88).

The sheer richness and complexity of the artist's work over four decades is open to continual further characterization. As an artist working from a *core principle*, often with strong conceptual aspects, his inner focus and dialogue within a given medium allows him high variability and unpredictability. Working with one or more principles at a time (e.g., the *physicality* of the medium and of languaging and imaging; *liminality* or the intense space between contraries and extremes of appearance), he can make it happen on multiple planes simultaneously—physical, personal, ontological, social, political—without reification of any one of them. Result: a singular event of reflexive speaking that marries mind and machine beyond any notion of reference as such—no stable signifier or signified, yet intense engagement at personal, emotional, and intellectual levels. The piece “Clover” (1994), part of the Western Washington University Public Sculpture Collection, consists of four monitor tubes placed back to back on a steel platform. Each screen features a man seen from behind walking continuously through a wooded background. The man becomes an apparatus of seeing and movement. Later works in computer animation—e.g., “Liminal Objects” (1995-), “Frustrum” (2006)—challenge one’s sense of “object” and mind-body boundaries and the very basis of our “reality”. Major projective installations — “Tall Ships” (1992), “HanD HearD” (1995–96), “Viewer” (1996), “Wall Piece” (2000), “Up Against Down” (2008) — raise these issues of physicality, objectivity, polyvalent signification, and language itself to a further human dimension—a principle of torsional engagement both within one’s own mind and body and up against the surface and face of the other.

He was influenced by the intellectual orientation of conceptual art which dominated art of the 1970s, but he instinctively evolved beyond the conceptual as such, working into a refined domain of principle that put him in full processual and open dialog both with electronic media and the language of thinking. His reading of the fiction and philosophical literary essays of Maurice Blanchot, in particular, provided him with ideas relating to the way in which language impinges on phenomenological experience, and a notion of 'the other'. Such reading informs Hill's visual-poetic explorations of the interrelationships between language, image, identity, and the body. For example, in "Cabin Fever" he uses the binary opposition of light and darkness to convey the notion of an interaction between a self and an 'other'. He has also explored immersive environments, as seen in his 1992 piece "Tall Ships". Hill's work thoroughly exploits the capacity of video to offer complex nonlinear narratives that encourage active engagement on the part of the viewer.

Tony Oursler's work exploited the technology developed in the early 1990s of very small video projectors that could be built into sculptures and structures as well as improvements in image brightness so that images could be placed on surfaces other than a flat screen. Deeply rooted in a conceptual framework, Tony Oursler conjures multimedia and immersive experiences which combine traditional art making tools with new technologies. Oursler is known for his work with moving images, installation and projection. He draws inspiration from wide ranging pop cultural phenomena including telecommunications, narrative evolution, conspiracy, social media, facial recognition, mysticism and environmental concerns. His works often take the form of a "palimpsest," layering possible futures with the recent past while focusing on present day issues. In recent years Oursler has used his extensive archive in conjunction with installations to blur the boundaries between art, fact and belief systems. Since 2000 he has produced many public works involving light and projection onto architecture and existing landscape features such as water, trees and smoke and sculptural objects such as cast bronze and stone. Oursler has developed an ever-evolving multimedia and audio-visual practice utilizing projections, computers, video screens, sculptures and optical devices, which might take form as large scale installations, intimate digital effigies or bots, ethereal talking automatons or immersive and sometimes cacophonous environments. Referencing a fully networked, digitally assisted future of image and identity production while harking back to the phantasmagoria, camera obscura and psychedelia, Oursler is keenly aware of the viewer as a participant in his work. As a pioneer of video art in early 1970s California and New York, Oursler developed a unique fusion of poetic free-association, stream of consciousness, dramaturgy and radical formal experimentation, employing painting, animation, montage and live action: "My early idea of what could be art for my generation was an exploded TV". From performative and lo-fi beginnings to his high tech environments of today, he holds an enduring fascination with the overlapping worlds of popular and subcultural activities and belief systems. Today, Oursler believes art can be "practiced by all and is a unifying transformative force."

David Hall and Tony Sinden exhibited the first multi-screen installation in Britain, 60 TV Sets, at Gallery House, London in 1972. Subsequently British video installation developed a distinctive pattern following the seminal international Video Show at the Serpentine Gallery, London in 1975, and later thanks in part to the existence of regular festivals in Liverpool and Hull and public galleries such as the Museum of Modern art, Oxford that routinely showcased the work. Sam Taylor-Wood's early installation pieces are good examples where specially filmed elements are shown as a series of serial projections. Iranian born Shirin Neshat combines cinematic sensibility to her video installations.

An interactive installation frequently involves the audience acting on the work of art or the piece responding to users' activity. There are several kinds of interactive installations that artists produce, these include web-based installations (e.g., Telegarden), gallery-based installations, digital-based installations, electronic-based installations, mobile-based installations, etc. Interactive installations appeared mostly at end of the 1980s ("Legible City" by Jeffrey Shaw, "La plume" by Edmond Couchot, Michel Bret...) and became a genre during the 1990s, when artists became particularly interested in using the participation of the audiences to activate and reveal the meaning of the installation.

With the improvement of technology over the years, artists are more able to explore outside of the boundaries that were never able to be explored by artists in the past. The media used are more experimental and bold; they are also usually cross media and may involve sensors, which plays on the reaction to the audiences' movement when looking at the installations. By using virtual reality as a medium, immersive virtual reality art is probably the most deeply interactive form of art. By allowing the spectator to "visit" the representation, the artist creates "situations to live" vs "spectacle to watch".

Section 4. Art of New Media

Theme 4.1 The main stages of digital-bearing development

In the post-war world of the 1950s, the rapid development of cybernetics and computer technology became the main context of art transformations. This stage of hybridization of art and technology covers the entire palette of artistic types and genres conventionally recognized in the artistic tradition. The terminology of that time itself speaks volumes – robotic sculpture, algorithmic painting, computer poem... This genre totality of new art was demonstrated by one of the largest exhibitions – "Cybernetic Insight", held in London in 1969.

In addition, cybernetic art is "charged" with a new ideology and a new scientific worldview, which cybernetics has been for a long time, having quickly formed one paradigmatic whole with information theory and systems theory. Cybernetic art paradoxically combines the cybernetic and modernist worldview, the overdeterminism of cybernetic control and the interest in chaos, spontaneity, randomness, unpredictability, so important for cybernetics itself and so pronounced in modernist aesthetics (Dadaism and Surrealism).

So, on the one hand, such pioneers of cybernetic art as Charles Csuri (born 1922) and Michael Noll (born 1939) were active followers of the rational aesthetics of Max Benze, who tried to find a semantic-mathematical model for describing the creative process and aesthetic properties of a work of art.

On the other hand, the composer Cage, the artist Robert Rauschenberg, the creator of cybersculptures Gordon Pask (1928—1996) strove to play the randomness and irrationality of aesthetic experience, strove to obtain in their works nondeterministic, unexpected, unpredictable effects, remaining, however, within the framework of the overdetermination of cybernetic control.

The use of computer technology for artistic purposes creates a completely new type of techno-artistic hybridity, since programming makes it possible for a relatively autonomous machine creativity, and feedback mechanisms create the effect of interactivity.

This is a fundamental step in the development of a relatively technological art. The cybernetic idea of feedback realized with the help of a computer control system enhances the element of processality and real-time dynamics both in the work itself and in the aesthetic experience of the viewer: the cybersculptures of Gordon Pask, Edward Ignatovich and Nicholas Schofer react with light and sound to the environment or human movement, John Cage's theatrical and musical productions and Robert Rauschenberg are based on the generation of "noise" music directly during the performance itself. Artists with the help of technology seek to create the impression of what the famous American art critic Jack Burnham in the 1970s defined as "artificial life" – the behavior of artificial objects perceived as similar to the behavior of living beings.

The computer has been successfully tested not only as a cybernetic control tool, but also as a machine capable of independent creativity – as a thinking machine. A new vision of the possibilities of using computer technology in an artistic context has been formed. In particular, regarding the mechanism of universal processing of any type of data embedded in a computer – the translation of various types of information into digital formations. At the moment when these functions of computer technologies from a technical point of view begin to be performed with sufficient speed and on a sufficiently large amount of data, and digitization combines them into a single system, cybernetic art becomes digital, gradually begins to lose its machine materiality and move into a new virtual space of artistic objects.

Beginning in Chicago during the 1970s, there was a surge of artists experimenting with video art and combining recent computer technology with their traditional mediums, including sculpture, photography, and graphic design. Many of the artists involved were grad students at The School of the Art Institute of Chicago, including Kate Horsfield and Lyn Blumenthal, who co-founded the "Video Data Bank" in 1976. Another artists involved was Donna Cox, she collaborated with mathematician George Francis and computer scientist Ray Idaszak on the project "Venus in Time" which depicted mathematical data as 3D digital sculptures named for their similarities to Paleolithic Venus statues. In 1982 artist Ellen Sandor and her team called (art)n Laboratory created the medium called PHSCologram, which

stands for photography, holography, sculpture, and computer graphics. Her visualization of the AIDS virus was depicted on the cover of IEEE Computer Graphics and Applications in November 1988. At the University of Illinois in 1989, members of the Electronic Visualization Laboratory Carolina Cruz-Neira, Thomas DeFanti, and Daniel J. Sandin collaborated to create what is known as “CAVE” or “Cave Automatic Virtual Environment” an early virtual reality immersion using rear projection.

In 1983, Roy Ascott introduced the concept of “distributed authorship” in his worldwide telematic project “La Plissure du Texte” for Frank Popper’s “Electra” at the Musée d’Art Moderne de la Ville de Paris. The development of computer graphics at the end of the 1980s and real time technologies in the 1990s combined with the spreading of the Web and the Internet favored the emergence of new and various forms of interactive art by Ken Feingold, Lynn Hershman Leeson, David Rokeby, Ken Rinaldo, Perry Hoberman, Tamas Waliczky; telematics art by Roy Ascott, Paul Sermon, Michael Bielický; Internet art by Vuk Ćosić, Jodi; virtual and immersive art by Jeffrey Shaw, Maurice Benayoun, Monika Fleischmann, and large scale urban installation by Rafael Lozano-Hemmer. In Geneva, the Centre pour l’Image Contemporaine or CIC coproduced with Centre Georges Pompidou from Paris and the Museum Ludwig in Cologne the first internet video archive of new media art. Simultaneously advances in biotechnology have also allowed artists like Eduardo Kac to begin exploring DNA and genetics as a new art medium.

Influences on new media art have been the theories developed around interaction, hypertext, databases, and networks. Important thinkers in this regard have been Vannevar Bush and Theodor Nelson, whereas comparable ideas can be found in the literary works of Jorge Luis Borges, Italo Calvino, and Julio Cortázar. In the book “New Media Art”, Mark Tribe and Reena Jana named several themes that contemporary new media art addresses, including computer art, collaboration, identity, appropriation, open sourcing, telepresence, surveillance, corporate parody, as well as intervention and hacktivism. In the book “Postdigitale”, Maurizio Bolognini suggested that new media artists have one common denominator, which is a self-referential relationship with the new technologies, the result of finding oneself inside an epoch-making transformation determined by technological development.

New media art does not appear as a set of homogeneous practices, but as a complex field converging around three main elements: 1) the art system, 2) scientific and industrial research, and 3) political-cultural media activism. There are significant differences between scientist-artists, activist-artists and technological artists closer to the art system, who not only have different training and technocultures, but have different artistic production. This should be taken into account in examining the several themes addressed by new media art.

Non-linearity can be seen as an important topic to new media art by artists developing interactive, generative, collaborative, immersive artworks like Jeffrey Shaw or Maurice Benayoun who explored the term as an approach to looking at varying forms of digital projects where the content relays on the user's experience.

This is a key concept since people acquired the notion that they were conditioned to view everything in a linear and clear-cut fashion. Now, art is stepping out of that form and allowing people to build their own experiences with the piece. Non-linearity describes a project that escape from the conventional linear narrative coming from novels, theater plays and movies. Non-linear art usually requires audience participation or at least, the fact that the “visitor” is taken into consideration by the representation, altering the displayed content. The participatory aspect of new media art, which for some artists has become integral, emerged from Allan Kaprow’s “Happenings” and became with Internet, a significant component of contemporary art.

The inter-connectivity and interactivity of the internet, as well as the fight between corporate interests, governmental interests, and public interests that gave birth to the web today, inspire a lot of current new media art.

One of the key themes in new media art is to create visual views of databases. Pioneers in this area include Lisa Strausfeld, Martin Wattenberg and Alberto Frigo. From 2004-2014 George Legrady’s piece “Making Visible the Invisible” displayed the normally unseen library metadata of items recently checked out at the Seattle Public Library on six LCD monitors behind the circulation desk. Database aesthetics holds at least two attractions to new media artists: formally, as a new variation on non-linear narratives; and politically as a means to subvert what is fast becoming a form of control and authority.

Many new media art projects also work with themes like politics and social consciousness, allowing for social activism through the interactive nature of the media. New media art includes explorations of code and user interface; interrogations of archives, databases, and networks; production via automated scraping, filtering, cloning, and recombinatory techniques; applications of user-generated content (UGC) layers; crowdsourcing ideas on social-media platforms; narrowcasting digital selves on “free” websites that claim copyright; and provocative performances that implicate audiences as participants.

Feminism and the Female Experience. Japanese artist Mariko Mori’s multimedia installation piece “Wave UFO” (1999-2003) sought to examine the science and perceptions behind the study of consciousness and neuroscience. Exploring the ways that these fields undertake research in a materially reductionist manner. Mori’s work emphasized the need for these fields to become more holistic and incorporate incites and understanding of the world from philosophy and the humanities. Swiss artist Pipilotti Rist’s (2008) immersive video installation “Pour Your Body Out” explores the dichotomy of beauty and the grotesque in the natural world and their relation to the female experience. The large-scale 360-degree installation featured breast-shaped projectors and circular pink pillows that invited viewers to relax and immerse themselves in the vibrant colors, psychedelic music, and partake in meditation and yoga. American filmmaker and artist Lynn Hersman Leeson explores in her films the themes of identity, technology and the erasure of women’s roles and contributions to technology. Her (1999) film “Conceiving Ada” depicts a computer scientist and new media artist named Emmy as she attempts and

succeeds at creating a way to communicate through cyberspace with Ada Lovelace, an Englishwoman who created the first computer program in the 1840s via a form of artificial intelligence.

The emergence of 3D printing has introduced a new bridge to new media art, joining the virtual and the physical worlds. The rise of this technology has allowed artists to blend the computational base of new media art with the traditional physical form of sculpture. A pioneer in this field was artist Jonty Hurwitz who created the first known anamorphosis sculpture using this technique.

As the technologies used to deliver works of new media art such as film, tapes, web browsers, software and operating systems become obsolete, New Media art faces serious issues around the challenge to preserve artwork beyond the time of its contemporary production. Currently, research projects into New media art are underway to improve the preservation and documentation of the fragile media arts heritage.

Methods of preservation exist, including the translation of a work from an obsolete medium into a related new medium, the digital archiving of media (see the “Rhizome Art Base”, which holds over 2000 works, and the Internet Archive), and the use of emulators to preserve work dependent on obsolete software or operating system environments.

Around the mid-90s, the issue of storing works in digital form became a concern. Digital art such as moving images, multimedia, interactive programs, and computer-generated art has different properties than physical artwork such as oil paintings and sculptures. Unlike analog technologies, a digital file can be recopied onto a new medium without any deterioration of content. One of the problems with preserving digital art is that the formats continuously change over time. Former examples of transitions include that from 8-inch floppy disks to 5.25-inch floppies, 3-inch diskettes to CD-ROMs, and DVDs to flash drives. On the horizon is the obsolescence of flash drives and portable hard drives, as data is increasingly held in online cloud storage.

New media art encompasses various mediums all which require their own preservation approaches. Due to the vast technical aspects involved no established digital preservation guidelines fully encompass the spectrum of new media art. New media art falls under the category of “complex digital object” in the Digital Curation Centre’s digital curation lifecycle model which involves specialized or totally unique preservation techniques. Complex digital objects preservation has an emphasis on the inherent connection of the components of the piece.

Theme 4.2 Technical and Artistic Hybridization in Art

Interactive art is a form of art that involves the spectator in a way that allows the art to achieve its purpose. Some interactive art installations achieve this by letting the observer or visitor “walk” in, on, and around them; some others ask the artist or the spectators to become part of the artwork.

Most examples of virtual Internet art and electronic art are highly interactive. Sometimes, visitors are able to navigate through a hypertext environment; some works accept textual or visual input from outside; sometimes an audience can influence the course of a performance or can even participate in it. Some other interactive artworks are considered as immersive as the quality of interaction involve all the spectrum of surrounding stimuli. Virtual reality environments like works by Maurice Benayoun (born 1957) and Jeffrey Shaw (born 1944) are highly interactive as the work the spectators – Maurice Benayoun call them “visitors”, Miroslaw Rogala calls them (v)users, Char Davies “immersants” – interact with take all their fields of perception.

Though some of the earliest examples of interactive art have been dated back to the 1920s, most digital art didn't make its official entry into the world of art until the late 1990s. Since this debut, countless museums and venues have been increasingly accommodating digital and interactive art into their productions. This budding genre of art is continuing to grow and evolve in a somewhat rapid manner through internet social sub-culture, as well as through large scale urban installations. Interactive art is a genre of art in which the viewers participate in some way by providing an input in order to determine the outcome. Unlike traditional art forms, wherein the interaction of the spectator is merely a mental event, interactivity allows for various types of navigation, assembly, and/or contribution to an artwork, which goes far beyond purely psychological activity. Interactivity as a medium produces meaning.

Interactive art installations are generally computer-based and frequently rely on sensors, which gauge things such as temperature, motion, proximity, and other meteorological phenomena that the maker has programmed in order to elicit responses based on participant action. In interactive artworks, both the audience and the machine work together in dialogue in order to produce a completely unique artwork for each audience to observe. However, not all observers visualize the same picture. Because it is interactive art, each observer makes their own interpretation of the artwork and it may be completely different from another observer's views.

Interactive art can be distinguished from generative art in that it constitutes a dialogue between the artwork and the participant; specifically, the participant has agency, or the ability, even in an unintentional manner, to act upon the artwork and is furthermore invited to do so within the context of the piece, i.e. the work affords the interaction. More often, we can consider that the work takes its visitor into account. In an increasing number of cases, an installation can be defined as a responsive environment, especially those created by architects and designers. By contrast, Generative Art, which may be interactive, but not responsive per se, tends to be a monologue – the artwork may change or evolve in the presence of the viewer, but the viewer may not be invited to engage in the reaction but merely enjoy it.

According to the new media artist and theorist Maurice Benayoun, the first piece of interactive art should be the work done by Parrhasius during his art contest with Zeuxis described by Pliny, in the fifth century B.C. when Zeuxis tried to unveil the painted curtain. The work takes its meaning from Zeuxis' gesture and wouldn't

exist without it. Zeuxis, by its gesture, became part of Parrhasius' work. This shows that the specificity of interactive art resides often less in the use of computers than in the quality of proposed "situations" and the "Other's" involvement in the process of sensemaking. Nevertheless, computers and real time computing made the task easier and opened the field of virtuality – the potential emergence of unexpected (although possibly pre-written) futures – to contemporary arts.

Some of the earliest examples of interactive art were created as early as the 1920s. An example is Marcel Duchamp's piece named "Rotary Glass Plates". The artwork required the viewer to turn on the machine and stand at a distance of one meter in order to see an optical illusion.

The present idea of interactive art began to flourish more in the 1960s for partly political reasons. At the time, many people found it inappropriate for artists to carry the only creative power within their works. Those artists who held this view wanted to give the audience their own part of this creative process. An early example is found in the early 1960s "change-paintings" of Roy Ascott, about whom Frank Popper has written: "Ascott was among the first artists to launch an appeal for total spectator participation". Aside from the "political" view, it was also current wisdom that interaction and engagement had a positive part to play within the creative process.

In the 1970s, artists began to use new technology such as video and satellites to experiment with live performances and interactions through the direct broadcast of video and audio.

Interactive art became a large phenomenon due to the advent of computer-based interactivity in the 1990s. Along with this came a new kind of art-experience. Audience and machine were now able to more easily work together in dialogue in order to produce a unique artwork for each audience. In the late 1990s, museums and galleries began increasingly incorporating the art form in their shows, some even dedicating entire exhibitions to it. This continues today and is only expanding due to increased communications through digital media.

A hybrid emerging discipline drawing on the combined interests of specific artists and architects has been created in the last 10–15 years. Disciplinary boundaries have blurred, and significant number of architects and interactive designers have joined electronic artists in the creation of new, custom-designed interfaces and evolutions in techniques for obtaining user input (such as dog vision, alternative sensors, voice analysis, etc.); forms and tools for information display (such as video projection, lasers, robotic and mechatronic actuators, led lighting etc.); modes for human-human and human-machine communication (through the Internet and other telecommunications networks); and to the development of social contexts for interactive systems (such as utilitarian tools, formal experiments, games and entertainment, social critique, and political liberation).

Virtual art is a term for the virtualization of art, made with the technical media developed at the end of the 1980s (or a bit before, in some cases). These include human-machine interfaces such as visualization casks, stereoscopic spectacles and screens, digital painting and sculpture, generators of three-

dimensional sound, data gloves, data clothes, position sensors, tactile and power feed-back systems, etc. As virtual art covers such a wide array of mediums it is a catch-all term for specific focuses within it. Much contemporary art has become, in Frank Popper's terms, **virtualized**.

Virtual art can be considered a post-convergent art form based on the bringing together of art and technology, thus containing all previous media as subsets. Sharing this focus on art and technology are the books of Jack Burnham ("Beyond Modern Sculpture", 1968) and Gene Youngblood ("Expanded Cinema", 1970). Since virtual art can consist of virtual reality, augmented reality, or mixed reality, it can be seen in other aspects of production such as video games and movies.

In his book, "From Technological to Virtual Art", Frank Popper traces the development of immersive, interactive new media art from its historical antecedents through today's digital art, computer art, cybernetic art, multimedia art, and net art. Popper shows that contemporary virtual art is a further refinement of the technological art of the late twentieth century and also a departure from it. What is new about this new media art, he argues, is its humanization of technology, its emphasis on interactivity, its philosophical investigation of the real and the virtual, and its multisensory nature. He argues further that what distinguishes the artists who practice virtual art from traditional artists is their combined commitment to aesthetics and technology. Their "extra-artistic" goals – linked to their aesthetic intentions – concern not only science and society but also basic human needs and drives.

To explain and illustrate the emergence of a techno-aesthetic, Popper stresses the panoramic and multi-generational reach of virtual art. As regards to virtual art, openness is stressed both from the point of view of the artists and their creativity and from that of the follow-up users in their reciprocating thoughts and actions. This commitment to the teeming openness found in virtual art can be traced to the theories of Umberto Eco and other aestheticians.

Virtual art can be seen in worlds like Second Life, and Inworldz virtual environments in which anything is possible to the user, who is represented by an avatar. In the virtual world, the avatar's abilities ranges from ordinary walking to flying. The environment and scenery of such environments is similar to the real world, except that it can be altered by the avatar. Worlds like Inworldz and Second Life feature an editor which allows the user to build his or her own experience just the way he or she wants it to be. The user is not bounded by physics or improbabilities that he or she faces in the real world.

Virtual art is made with many computer programs and has no boundaries, so it uses animations, movies, computer games and so on. As it becomes more and more popular and important, it results in people being able to live another virtual life. With the advancements in technology, virtual art has transformed and evolved quickly from simple 8-bit representations to 3D models containing millions of polygons.

Internet art (also known as **net art**) is a form of new media art distributed via the Internet. This form of art circumvents the traditional dominance of the physical gallery and museum system. In many cases, the viewer is drawn into some

kind of interaction with the work of art. Artists working in this manner are sometimes referred to as **net artists**.

Net artist may use specific social or cultural internet traditions to produce their art outside of the technical structure of the internet. Internet art is often — but not always — interactive, participatory, and multimedia-based. Internet art can be used to spread a message, either political or social, using human interactions.

The term “Internet art” typically does not refer to art that has been simply digitized and uploaded to be viewable over the Internet, such as in an online gallery. Rather, this genre relies intrinsically on the Internet to exist as a whole, taking advantage of such aspects as an interactive interface and connectivity to multiple social and economic cultures and micro-cultures, not only web-based works.

New media theorist and curator Jon Ippolito defined “Ten Myths of Internet Art” in 2002. He cites the above stipulations, as well as defining it as distinct from commercial web design, and touching on issues of permanence, archivability, and collecting in a fluid medium.

Internet art is rooted in disparate artistic traditions and movements, ranging from Dada to Situationism, conceptual art, Fluxus, video art, kinetic art, performance art, telematic art and happenings.

In 1974, Canadian artist Vera Frenkel worked with the “Bell Canada Teleconferencing Studios” to produce the work “String Games: Improvisations for Inter-City Video”, the first artwork in Canada to use telecommunications technologies.

An early telematics artwork was Roy Ascott’s work, “La Plissure du Texte”, performed in collaboration created for an exhibition at the Musée d’art Moderne de la Ville de Paris in 1983. In 1985, Eduardo Kac created the animated videotex poem “Reabracadabra” for the Minitel system.

Media art institutions such as Ars Electronica Festival in Linz, or the Paris-based IRCAM (a research center for electronic music), would also support or present early networked art. In 1997 MIT’s List Visual Arts Center hosted “PORT: Navigating Digital Culture”, which included internet art in a gallery space and “time-based Internet projects”. Artists in the show included Cary Peppermint, Prema Murthy, Ricardo Dominguez, and Adrienne Wortzel. In 2000 the Whitney Museum of American Art included net art in their Biennial exhibit. It was the first time that Internet art had been included as a special category in the Biennial, and it marked one of the earliest examples of the inclusion of internet art in a museum setting. Internet artists included Mark Amerika, Fakeshop, Ken Goldberg, etoy and ®™ark.

With the rise of search engines as a gateway to accessing the web in the late 1990s, many net artists turned their attention to related themes. The 2001 “Data Dynamics” exhibit at the Whitney Museum featured “Netomat” (Maciej Wisniewski) and “Apartment” (Marek Walczak and Martin Wattenberg), which used search queries as raw material. Mary Flanagan’s “The Perpetual Bed” received attention for its use of 3D nonlinear narrative space, or what she called “navigable narratives”. Her 2001 piece titled “Collection” shown in the Whitney Biennial displayed items amassed from hard drives around the world in a computational

collective unconscious'. Golan Levin's "The Secret Lives of Numbers" (2000) visualized the "popularity" of the numbers 1 to 1,000,000 as measured by Alta Vista search results. Such works pointed to alternative interfaces and questioned the dominant role of search engines in controlling access to the net.

Nevertheless, the Internet is not reducible to the web, nor to search engines. Besides these unicast (point to point) applications, suggesting the existence of reference points, there is also a multicast (multipoint and uncentered) internet that has been explored by very few artistic experiences, such as the Poietic Generator. Internet art has, according to Juliff and Cox, suffered under the privileging of the user interface inherent within computer art. They argue that Internet is not synonymous with a specific user and specific interface, but rather a dynamic structure that encompasses coding and the artist's intention.

The emergence of social networking platforms in the mid-2000s facilitated a transformative shift in the distribution of internet art. Early online communities were organized around specific "topical hierarchies", whereas social networking platforms consist of egocentric networks, with the "individual at the center of their own community". Artistic communities on the Internet underwent a similar transition in the mid-2000s, shifting from Surf Clubs, 15 to 30 person groups whose members contributed to an ongoing visual-conceptual conversation through the use of digital media and whose membership was restricted to a select group of individuals, to image-based social networking platforms, like Flickr, which permit access to any individual with an e-mail address. Internet artists make extensive use of the networked capabilities of social networking platforms, and are rhizomatic in their organization, in that production of meaning is externally contingent on a network of other artists' content.

Post-Internet is a loose descriptor for works that are derived from the Internet or its effects on aesthetics, culture and society. It is a controversial and highly criticized term in the art community. It emerged from mid-2000s discussions about Internet art by Marisa Olson, Gene McHugh, and Artie Vierkant (the latter notable for his "Image Objects", a series of deep blue monochrome prints). Between the 2000s and 2010s, post-Internet artists were largely the domain of millennials operating on web platforms such as "Tumblr" and "My Space". The movement is also responsible for spearheading slews of microgenres and subcultures such as seapunk and vaporwave.

This term "post internet" was coined by Internet artist Marisa Olson in 2008. According to a 2015 article in "The New Yorker", the term describes "the practices of artists who ... unlike those of previous generations, [employ] the Web [as] just another medium, like painting or sculpture. Their artworks move fluidly between spaces, appearing sometimes on a screen, other times in a gallery". In the early 2010s, "post-Internet" was popularly associated with the musician Grimes, who used the term to describe her work at a time when post-Internet concepts were not typically discussed in mainstream music arenas.

Telematic art is a descriptive of art projects using computer-mediated telecommunications networks as their medium. Telematic art challenges the

traditional relationship between active viewing subjects and passive art objects by creating interactive, behavioural contexts for remote aesthetic encounters. “Telematics” was first coined by Simon Nora and Alain Minc in “The Computerization of Society”. Roy Ascott sees the telematic art form as the transformation of the viewer into an active participator of creating the artwork which remains in process throughout its duration. Ascott has been at the forefront of the theory and practice of telematic art since 1978 when he went online for the first time, organizing different collaborative online projects.

Although Ascott was the first person to name this phenomenon, the first use of telecommunications as an artistic medium has occurred in 1922 when the Hungarian constructivist artist László Moholy-Nagy made the work “Telephone Pictures”. This work questioned the idea of the isolated individual artist and the unique art object. In 1932, Bertold Brecht emphasized the idea of telecommunications as an artistic medium in his essay “The Radio as an Apparatus of Communication”. In this essay, Brecht advocated the two-way communication for radio to give the public the power of representation and to pull it away from the control of corporate media. Art historian Edward A. Shanken has authored several historical accounts of telematic art, including “From Cybernetics to Telematics: The Art, Pedagogy, and Theory” of Roy Ascott”.

In 1977, “Satellite Arts Project” by Kit Galloway and Sherrie Rabinowitz used satellites to connect artists on the east and west coast of the United States. This was the first time that artists were connected in a telematics way. With the support of NASA, the artists produced composite images of participants, enabling an interactive dance concert amongst geographically disparate performers. An estimated audience of 25,000 saw bi-coastal discussions on the impact of new technologies on art, and improvised, interactive dance and music performances that were mixed in real time and shown on a split screen. These first satellite works emphasized the primacy of process that remained central to the theory and practice of telematic art.

Ascott used telematics for the first time in 1978 when he organized a computer-conferencing project between the United States and the United Kingdom called “Terminal Art”. For this project, he used Jacques Vallée’s Infomedia Notepad System, which made it possible for the users to retrieve and add information stored in the computer’s memory. This made it possible to interact with a group of people to make aesthetic encounters more participatory, culturally diverse, and richly layered with meaning. Ascott did more similar projects like “Ten Wings”, which was part of Robert Adrian’s “The World in 24 Hours” in 1982. The most important telematic artwork of Ascott is “La Plissure du Texte” from 1983. This project allowed Ascott and other artists to participate in collectively creating texts to an emerging story by using computer networking. This participation has been termed as “distributed authorship”. But the most significant matter of this project is the interactivity of the artwork and the way it breaks the barriers of time and space. In the late 1980s, the interest in this kind of project using computer networking expanded, especially with the release of the World Wide Web in the early 1990s.

BioArt is an art practice where humans work with live tissues, bacteria, living organisms, and life processes. Using scientific processes such as biotechnology (including technologies such as genetic engineering, tissue culture, and cloning) the artworks are produced in laboratories, galleries, or artist' studios. The scope of BioArt is considered by some artists to be strictly limited to "living forms", while other artists would include art that uses the imagery of contemporary medicine and biological research, or require that it address a controversy or blind spot posed by the very character of the life sciences.

Although BioArtists work with living matter, there is some debate as to the stages at which matter can be considered to be alive or living. Creating living beings and practicing in the life sciences brings about ethical, social, and aesthetic inquiry. The phrase "BioArt" was coined by Eduardo Kac in 1997 in relation to his artwork "Time Capsule". Although it originated at the end of the 20th century, through the works of pioneers like Suzanne Anker, Joe Davis, and the artists hosted by Symbiotica, BioArt is more widely practiced now.

BioArt is often intended to be shocking or humorous. One survey of the field, "Isotope: A Journal of Literary Science and Nature Writing", puts it this way: "BioArt is often ludicrous. It can be lumpy, gross, unsanitary, sometimes invisible, and tricky to keep still on the auction block. But at the same time, it does something very traditional that art is supposed to do: draw attention to the beautiful and grotesque details of nature that we might otherwise never see". While raising questions about the role of science in society, "most of these works tend toward social reflection, conveying political and societal criticism through the combination of artistic and scientific processes".

While most people who practice BioArt are categorized as artists in this new media, they can also be seen as scientists, since the actual medium within a work pertains to molecular structures, and so forth. Because of this dual-acceptance, the Department of Cell Biology at Harvard University invites anyone to submit works based on scientific or artistic value. This can encourage anyone to submit work they strongly respond to.

The laboratory work can pose a challenge to the artist, at first, as the environment is often foreign to the artist. While some artists have prior scientific training, others must be trained to perform the procedures or work in tandem with scientists who can perform the tasks that are required. Bio artists often use formations relating to or engaged with science and scientific practices, such as working with bacteria or live-tissue.

Much of the art involves tissue-culturing and transgenics, a term for a variety of genetic engineering processes through which genetic material from one organism is altered by the addition of synthesized or transplanted genetic material from another organism.

In 2000, Eduardo Kac commissioned the creation of a transgenic GFP bunny as part of a piece called GFP Bunny. The PR campaign included a picture of Kac holding a white rabbit and another, iconic image of a rabbit photographically enhanced to appear green.

The Tissue Culture & Art Project in collaboration with Stelarc grew a 1/4 scale replica of an ear using human cells. The project was carried out at Symbiotica: the Art & Science Collaborative Research Laboratory, School of Anatomy and Human Biology, University of Western Australia.

In 2011 the BFA Fine Arts Department of the School of Visual Arts in New York City opened the first Bio Art Laboratory in an art school in the US. The SVA Bio Art Lab offers art students access to scientific tools and techniques to create works of art.

The scope of the term BioArt is a subject of ongoing debate. The primary point of debate centers around whether BioArt must necessarily involve manipulation of biological material, as is the case in microbial art which by definition is made of microbes. A broader definition of the term would include work that addresses the social and ethical considerations of the biological sciences. Under these terms BioArt as a genre has many crossovers with fields such as critical or speculative design. This type of work often reaches a much broader general audience, and is focused on starting discussions in this space, rather than pioneering or even using specific biological practices. Examples in this space include Ray Fish shoes, which advertised shoes made and patterned with genetically engineered stingray skin, BiteLabs, a biotech startup that attempted to make salami out of meat cultured from celebrity tissue samples, and Ken Rinaldo's "Augmented Fish Reality", an installation of five rolling robotic fish-bowl sculptures controlled by Siamese Fighting Fish.

BioArt has been scrutinized for its apparent lack of ethics. "USA Today" reported that animal rights groups accused Kac and others of using animals unfairly for their own personal gain, and conservative groups question the use of transgenic technologies and tissue-culturing from a moral standpoint.

Alka Chandna, a senior researcher with PETA in Norfolk, Virginia, has stated that using animals for the sake of art is no different from using animal fur for clothing material. Transgenic manipulation of animals is just a continuum of using animals for human end, regardless of whether it is done to make some sort of sociopolitical critique. The suffering and exacerbation of stress on the animals is very problematic.

However, many BioArt projects deal with the manipulation of cells and not whole organisms, such as "Victimless Leather" by Symbiotica. An actualized possibility of wearing 'leather' without killing an animal is offered as a starting point for cultural discussion. Our intention is not to provide yet another consumer product, but rather to raise questions about our exploitation of other living beings.

3. PRACTICAL CHAPTER

3.1 Topics of practical lessons

1. **Technological art at the end of the 19th the first half of the 20th century.**
 - A technological element in avant-garde art at the beginning of the 20th century.
 - The exploration of new materials, media and methods by László. Moholy-Nagy, Hans Werner Richter, Walter Ruttmann and Oskar Fischinger.
 - The usage of media as a creative method of artists-dadaists. The original technical decisions of Marcel Duchamp, Francis Picabia, Naum Gabo.
 - The usage of cinema and machines in theatre; the formation of a new aesthetic platform in the creative work of Vsevolod Meyerhold, Erwin Piscator, Enrico Prampolini, Filippo Tommaso Marinetti and Oskar Schlemmer.
2. **Intermedia art practices**
 - Happenings of John Cage, Robert Rauschenberg and Merce Cunningham.
 - Interdisciplinary creativity of Fluxus.
 - The assimilation of happenings principles in the experiments of Peter Brook, Jerzy Grotowski, Trisha Brown and Pina Bausch.
 - The art of performance, conceptual shamanism of Joseph Beuys, alive sculpture of Gilbert & George and etc.
 - Installation in creativity of Robert Rauschenberg, Joseph Beuys, Jannis Kounellis, Hans Haake, Otto Piene and etc.
3. **Video performance: the main development tendencies**
 - The gender problems in performance. Feminist performance of Ulrike Rosenbach and Orlan.
 - Self-presentation in video performances of Marina Abramović and Ulay, Peter Campus, Joan Jonas.
 - Conceptualism and minimalism in video performances. Political concepts in video of Ulrike Rosenbach, Klaus vom Bruch, Marcel Odenbach.
 - The interpretation of situational manifestos in creative work of D. Graham and D. Hall.
4. **Single-channel video: the main development tendencies**
 - Linguistic motives in works of Garry Hill and Robert Cahen.
 - Psychoanalysis of Jacques Lacan and semiotics in creative work of Ken Feingold.
 - The themes of identity and political freedom in creativity of Bulat Galeev and Péter Forgács.
 - The research of individuality problems by video artists Ma Liumin, Li Yunbing.
 - One channel video of Bill Viola, Alexander Sokurov and Douglas Gordon.
5. **Video installation: the main development tendencies**

- The manipulations with space in video installations of Nam June Paik and Garry Hill.
 - Video sculptures of Wolf Vostell, Shigeo Kubota, Les Levine. Multi screen installations of David Hall and Tony Sinden. Interactive installations of Garry Hill.
 - The research of social, everyday, cultural and political reality in creative work of Yang Fudong, Candice Breitz, Anri Sala, Aernout Mik and etc.
 - The problem of identity in the interpretation of Mathew Barney, Mona Hatoum and Rosemarie Trockel.
 - The usage of cinema in the video installations of Steve McQueen, Rodney Graham and Shirin Neshat.
6. **The main stages of digital bearing development**
- The themes of artificial life and intellect, telepresence and tele-robot-techniques, body and personality in digital art.
 - The formation of new forms of art: the internet art, software art, visualization of data, narrative media, tactics and locative media.
 - The experiments with multi screen forms of Eija-Liisa Ahtila, Pierre Huyghe, Doug Aitken.
 - Post Internet art in creative work of Cory Arcangel, Petra Cortright, DIS, Parker Ito, Rachel de Joode.
7. **Technical and artistic hybridization in art**
- The systems of virtual reality of Peter Weibel and Jeffrey Shaw.
 - Experiments with VR technologies in creative work of Lynn Hershman Leeson, Doug Aitken, Bill Seaman.
 - The technology of hypertext as the base of net art; the works of Luther Blisset, Jodi, Kamilla B. Richter, Alexei Shulgin, Teo Spiller, etc.
 - Telematic art of Fred Forest, Karen O' Rourke, Gilberto Prado.
 - Augmented and hybrid reality in art.
 - BioArt of Stelarc, Suzanne Anker, John Davis, Eduardo Kac. The experiments with artificial life of William Latham and Karl Sims.

4. KNOWLEDGE CONTROL CHAPTER

4.1 Notes on test

On the test, students are offered several photos and video clips (5 in each variant) from the list below. The student's task is to indicate the author's name, the title of the work, the main idea of the work.

List of art works for test:

1. Abramović, Marina and Ulay "AAA AAA" (1978).
2. Abramović, Marina and Ulay "The Other: Rest Energy" (1980).
3. Ahtila, Eija-Liisa "If 6 Was 9" (1995).
4. Akerman, Chantal "I, you, he, she" / "Je, tu, il, elle" (1976).
5. Arcangel, Cory "Paganini's 5th Caprice" (2011).
6. Atkins, Ed "Us Dead Talk Love" (2012).
7. Baldessari, John "I Am Making Art" (1971).
8. Baldessari, John "John Baldessari Sings LeWitt" (1972).
9. Burden, Chris "Big Wrench" (1980).
10. Barney, Matthew "Cremaster Cycle" (1994-2002).
11. Birnbaum, Dara "Technology / Transformation: Wonder Woman" (1978-79).
12. Burden, Chris "Shoot" (1971).
13. Burden, Chris "Through the Night Softly" (1973).
14. Campbell, Colin "Bad Girls" (1980).
15. Campbell, Colin "The Woman From Malibu" (1976).
16. Campus, Peter, "Double Vision" (1971).
17. Campus, Peter "Three Transitions" (1973).
18. Fast, Omer Fast "5000 Feet Is the Best" (2011).
19. Fei, Cao "Whose Utopia" (2006).
20. Fischli and Weiss "The Way Things Go" (1987).
21. Gordon, Douglas "24 Hour Psycho" (1993).
22. Graham, Dan "Performer/Audience/Mirror" (1975).
23. Hall, David "TV Interruptions: Tap piece" (1971).
24. Hill, Gary "Incidence of a Catastrophe" (1987-88).
25. Hill, Gary "Happenstance" (1983).
26. Hill, Gary "Processual Video" (1980).
27. Huyghe, Pierre "Untitled (Human Mask)" (2014).
28. Jafa, Arthur "Love Is the Message, the Message Is Death" (2018).
29. Jonas, Joan "Vertical Roll" (1972).
30. Kelley, Mike "Day Is Done" (2006).
31. Kentridge, William "More Sweetly Play the Dance" (2015).
32. Leckey, Mark "Fiorucci Made Me Hardcore" (1999).
33. Marclay, Christian "Telephones" (1995).
34. Marclay, Christian "The Clock" (2010).

35. McQueen, Steve "Caribs' Leap/Western Deep" (2002).
36. Nauman, Bruce "Art Make-Up" (1967).
37. Nauman, Bruce "Pinch Neck" (1968).
38. Nauman, Bruce "Walking in An Exaggerated Manner Around the Perimeter of a Square" (1967-68).
39. Neshat, Shirin "Rapture" (1999).
40. Paik, Nam Jun "TV Bra for Living Sculpture" (1969).
41. Paik, Nam Jun "TV Buddha" (1974).
42. Pape, Lygia "Eat Me" (1975).
43. Rist, Pipilotti "Ever Is Over All" (1997).
44. Rist, Pipilotti "I Couldn't Agree with You More" (1999).
45. Rosler, Martha "Vital Statistics of a Citizen, Simply Obtained" (1977).
46. Serra, Richard "Hand Catching Lead" (1968).
47. Smith, John "The Girl Chewing Gum" (1976).
48. Viola, Bill "Ancient of Days" (1979).
49. Viola, Bill Viola "The Reflecting Pool" (1979).
50. Viola, Bill "The Quintet of the Astonished" (2000).
51. Vostell, Wolf, "Sun in Your Head" (1963).
52. Wearing, Gillian, "2 into 1" (1997).
53. Weibel, Peter "Endless Sandwich" (1969).

4.2 Notes on essay

The control essay should have a volume of approximately 10,000 characters. The work should include an introduction with a description of the problem, the main part that illustrates the topic of the essay with examples of specific works, a conclusion with reasonable conclusions.

Approximate list of essay topics:

1. Technology and art: the historical aspect of interaction
2. Problems of exhibiting, collecting and storing digital art
3. Digital technologies as a tool for creating a work of art
4. Key trends in the development of digital photography
5. Digital sculpture: development trends and key representatives
6. Digital art system: forms and genres
7. The specifics of digital installation
8. Features of the development of digital cinema and animation
9. Specifics of Internet art
10. The specifics of software art
11. Virtual reality in contemporary art
12. Artificial life as a topic of digital art
13. Artificial intelligence as a topic of digital art
14. Telepresence and telerobotonics in contemporary art
15. Body and personality as a problem of digital art
16. Database aesthetics and data visualization
17. The specifics of digital narrative environments
18. Video games in the system of contemporary art
19. The use of tactical media in contemporary art
20. Technologies of the future as a theme of contemporary art
21. Rethinking public space: Locative media and public interactive
22. Augmented and hybrid reality in contemporary art
23. Social media as a tool for creating and promoting works of art

4.3 Credit Items

1. The development of art media in the context of art history.
2. The Media theories of Marshall McLuhan, Friedrich Adolf Kittler, Lev Manovich.
3. Media art in the art system.
4. Main forms of media art.
5. A technological element in avant-garde art at the beginning of the 20th century.
6. The exploration of new materials, media and methods by László Moholy-Nagy, Hans Werner Richter, Walter Ruttmann and Oskar Fischinger.
7. The usage of cinema and machines in theatre; the formation of a new aesthetic platform in the creative work of Vsevolod Meyerhold, Erwin Piscator, Enrico Prampolini, Filippo Tomaso Marinetti and Oskar Schlemmer.
8. Intermediality in art history.
9. Happenings of John Cage, Robert Rauschenberg and Merce Cunningham.
10. Interdisciplinary creativity of Fluxus.
11. The assimilation of happenings principles in the experiments of Peter Brook, Jerzy Grotowski, Trisha Brown and Pina Bausch.
12. The art of performance, conceptual shamanism of Joseph Beuys, alive sculpture of Gilbert & George and etc.
13. Installation in creativity of Robert Rauschenberg, Joseph Beuys, Jannis Kounellis, Hans Haake, Otto Piene and etc.
14. The gender problems in performance.
15. Feminist performance of Ulrike Rosenbach and Orlan.
16. Self-presentation in video performances of Marina Abramović and Ulay, Peter Campus, Joan Jonas.
17. Conceptualism and minimalism in video performances.
18. Political concepts in video of Ulrike Rosenbach, Klaus vom Bruch, Marcel Odenbach.
19. The interpretation of situational manifestos in creative work of Dan Graham and David Hall.
20. The manipulations with temporality in single channel video.
21. Psychoanalysis of Lacan and semiotics in creative work of Ken Feingold.
22. The themes of identity and political freedom in creativity of Bulat Galeev and Péter Forgács.
23. The research of individuality problems by video artists Ma Liumin, Li Yunbing.
24. Bill Viola's creativity.
25. Douglas Gordon's creativity.
26. The manipulations with space in video installations of Nam June Paik and Garry Hill.
27. Video sculptures of Wolf Vostell, Shigeo Kubota, Les Levine.
28. Multiscreen installations of David Hall and Tony Sinden. Interactive installations of Gerry Hill.

29. The problem of identity in the interpretation of Matthew Barney, Mona Hatoum and Rosemarie Trockel.
30. The usage of cinema in the video installations of Steve McQueen, Rodney Graham and Shirin Neshat.
31. The specificity of cyber art, rational aesthetics of Max Bense.
32. The themes of artificial life and intellect in digital art.
33. Telepresence and tele-robot-techniques, body and personality in digital art.
34. The formation of new forms of art: the internet art, software art, visualization of data, narrative media, tactics and locative media.
35. Interactivity and virtuality in art.
36. The systems of virtual reality of Peter Weibel and Jeffrey Shaw.
37. Experiments with VR technologies in creative work of Lynn Hershman Leeson, Doug Aitken.
38. The technology of hypertext as the base of net art; the works of Luther Blisset, Jodi, Kamilla B. Richter, Alexei Shulgin, Teo Spiller.
39. Telematic art of Fred Forest, Karen O' Rourke, Gilberto Prado.
40. BioArt of Stelarc, Suzanne Anker, John Davis, Eduardo Kac. The experiments with artificial life of William Latham and Karl Sims.

5. AUXILIARY CHAPTER

5.1 Syllabus

Section 1. Introduction

The development of art media in the context of art history. Media as the means of communication and (mass) information. The Media theories of M. McLuhan, F.A. Kittler, L. Manovich.

Media art as the art based on media images. Media art in the art system. Approaches to media art classifications. Intermedia as an interdisciplinary art reality. New media art of hybrid genres on the base of digital technologies.

Section 2. Genesis of Media Art

2.1 Technological art at the end of the 19th the first half of the 20th centuries.

A technological element in avant-garde art at the beginning of the 20th century. The exploration of new materials, media and methods by L. Moholy-Nagy, H. Richter, W. Ruttmann and O. Fischinger. The usage of media as a creative method of artists-dadaists. The original technical decisions of M. Duchamp, F. Picabia, N. Gabo.

The usage of cinema and machines in theatre; the formation of a new aesthetic platform in the creative work of V. Meyerhold, E. Piscator, E. Prampolini, F.T. Marenetti and O. Schlemmer.

Cinema aesthetics of S. Eisenstein, experiments of Dziga Vertov with the usage of montage. The manifestos of Italian futurists and the ideas of B. Brecht about the radio usage. V. Khlebnikov about media influence on collective consciousness.

2.2. Intermedia art practices

Intermediality in art history. Painting as artistic activity in creative work of J. Pollock, G. Mathieu, N. de Saint Phalle, Y. Klein and etc. Action art: approaches to classifications. Happenings of J. Cage, R. Rauschenberg and M. Cunningham. The element of controlled arbitrariness in creative work of J. Cage and activity of his followers A. Kaprow, C. Oldenburg, Y. Ono; interdisciplinary creativity of Fluxus. The assimilation of happenings principles in the experiments of P. Brook, J. Grotowski, T. Brown and P. Bausch.

The art of performance, conceptual shamanism of J. Beuys, alive sculpture of Gilbert & George and etc.

Installation in creativity of R. Rauschenberg, J. Beuys, J. Kounellis, G. Hecker, H. Haake, O. Piene and etc.

Section 3. Media Art

3.1 Video performance: the main development tendencies

Chamber performance based on media. The performances fixation of B. Nauman, V. Acconci, J. Jonas. The musical and video performances of Nam June Paik. The concept of Therapeutic Disaster and Actions of W. Vostell. The films and

performances of group “Gutai”. The radical media performance in creative work of Vienna actionists (H. Nitsch, R. Schwarzkogler, O. Muhl, G. Brus).

The gender problems in performance. Feminist performance of U. Rosenbach and Orlan. Self-presentation in video performances of M. Abramović and Ulay, P. Campus, J. Jonas. Conceptualism and minimalism in video performances. Political concepts in video of U. Rosenbach, K. von Bruch, M. Odenbach. The interpretation of situational manifestos in creative work of D. Graham and D. Hall. Post modernism in creativity of Worcester group and the comedy performances of M. Smith.

3.2 Single-channel video: the main development tendencies

Documentary rollers with alternative news reports (L. Levine, P. Gillet, TVTV) and fiction video (Nam June Paik, A. Warhol) as the sources of video art. Decollages of W. Vostel. The television critics in creative work of R. Serra, D. Davis, T. Iimura and M. Idemitsu. Experiments with digital processing of images of W & S. Vasulka.

The manipulations with temporality in one channel video. Conceptual video of J. Baldessary, S. Smith and E. Stewart, B. Nauman and K. Preobrazhensky. The research of identity in works of M. Odenbach. S. Neshat, E.-L. Ahtila. Linguistic motives in works of G. Hill and R. Cahen; psychoanalysis of Lakan and semiotics in creative work of K. Feingold. The themes of identity and political freedom in creativity of B. Galeev and P. Forgash. The research of individuality problems by video artists Ma Liumin, Li Yunbing. One channel video of B. Viola, A. Sokurov and D. Gordon.

3.3. Video installation: the main development tendencies

The origin of video installation is in altar painting and museum practice. The manipulations with space in video installations of Nam June Paik and G. Hill. Video sculptures of W. Vostell, S. Cubota, L. Livine. Multi-screen installations of D. Hall and T. Sinden. Interactive installations of G. Hill.

The studies of social functions of art and media by video artists. The research of social, everyday, cultural and political reality in creative work of Yang Fudong, C. Breitz, A. Sala, A. Mik and etc. The problem of identity in the interpretation of M. Barney, M. Hatoum and R. Trockel. The usage of cinema in the video installations of S. McQueen, R. Graham and S. Neshat.

Section 4. Art of New Media

4.1. The main stages of digital image-bearing development

The specificity of cyber art, rational aesthetics of M. Bense. Interactive machines and sculptures of G. Pask, E. Ignatovich, N. Schoffer; cyber theatre of B. Kluver and R. Rauschenberg; algorhythmic painting and animation of M. Noll, C. Csury, K.C. Knowlton and etc. The comparative analysis of the concepts of S. Le Witt and M. Moore.

The themes of artificial life and intellect, telepresence and tele-robot-techniques, body and personality in digital art. The formation of new forms of art: the internet art, software art, visualization of data, narrative media, tactics and locative media.

Hyper realistic tendencies at the end of the 20th century. The development of a painting tradition and reconsideration of the representation origin in creative work of C. Cottingham, V. Burgin, J. Wall, A. Gursky. The experiments with multi screen forms of E.-L. Ahtila, P. Huyghe, D. Aitken. The research of interactivity in the sphere of fine arts of M. Bogomolova and group “rAndom International”.

Post digital art in creative work of E. Zelensky, D. Rozin, S. Krispin, K. Nikolay and art-group “Troika”.

4.2. Technical and artistic hybridization in art

Interactivity and virtuality in art. The systems of virtual reality of P. Weibel and J. Shaw; experiments with VR technologies in creative work of L.H. Leeson, D. Aitken, B. Seaman. The technology of hypertext as the base of net art; the works of G. Adrew, M. America, L. Blisset, Jodi, K.B. Richter, A. Shulgin, T. Spiller. Telematic art of D. Forest, K. O’ Rourke, G. Prado. Interactive multimedia communication systems of “Minus Delta”, “Van Gough TV” and “PONTON”.

Epoch 2.0 and art in the Internet. Augmented and hybrid reality in art. BioArt of Stelarc, S. Anker, J. Davis, E. Kac. The experiments with artificial life of W. Latham and K. Sims.

**EDUCATIONAL METHODOICAL CHART OF
THE ACADEMIC DISCIPLINE**

№ section theme	Name of section & theme	Number of class lessons		Managed independent work of students	Form of control
		lectures	practical		
1.	Introduction	2			
2.	Genesis of Media Art	4	4	2	presentation at the seminar
2.1	Technological art at the end of the 19 th the first half of the 20 th centuries	2	2		
2.2	Intermedia art practices	2	2		
3.	Media Art	6	6	2	test
3.1	Video performance: the main development tendencies	2	2		
3.2	Single-channel video: the main development tendencies	2	2		
3.3	Video installation: the main development tendencies	2	2		
4.	Art of New Media	4	4	2	essay
4.1	The main stages of digital bearing development	2	2		
4.2	Technical and artistic hybridization in art	2	2		
	Total...	16	12	6	

5.2 Main Literature Sources

1. *Bruhn, J.* Intermedial Studies : An Introduction to Meaning Across Media [Electronic resource] / Jørgen Bruhn, Beate Schirrmacher. – Abingdon, Oxon : Routledge, 2022. – Access mode: <https://web.s.ebscohost.com/ehost/detail/detail?vid=13&sid=79785138-5403-4c44-8da5-9476d6b7a0cf%40redis&bdata=Jmxhbmc9cnUmc2l0ZT1laG9zdC1saXZl#AN=2969444&db=nlebk>.
2. *Lüneburg, B.* TransCoding - From 'Highbrow Art' to Participatory Culture : Social Media - Art – Research [Electronic resource] / B. Lüneburg. – Bielefeld, 2018. – Access mode: <https://web.s.ebscohost.com/ehost/detail/detail?vid=12&sid=79785138-5403-4c44-8da5-9476d6b7a0cf%40redis&bdata=Jmxhbmc9cnUmc2l0ZT1laG9zdC1saXZl#AN=2962161&db=nlebk>.
3. *Seifert, U.* Paradoxes of Interactivity : Perspectives for Media Theory, Human-Computer Interaction, and Artistic Investigations [Electronic resource] / Uwe Seifert, Jin Hyun Kim, Anthony Moore. – Bielefeld, 2015. – Access mode: <https://web.s.ebscohost.com/ehost/detail/detail?vid=15&sid=79785138-5403-4c44-8da5-9476d6b7a0cf%40redis&bdata=Jmxhbmc9cnUmc2l0ZT1laG9zdC1saXZl#AN=2970826&db=nlebk>.

5.3 Complimentary Literature Sources

1. *Andersen, C. U.* The Metainterface: The Art of Platforms, Cities, and Clouds / C. U. Andersen, S. B. Pold. – Cambridge, MA: MIT Press, 2018. – 248 p.
2. *Bolyer, J. D.* The Digital Plenitude: The Decline of Elite Culture and the Rise of New Media / J. D. Bolyer. – Cambridge, MA: MIT Press, 2019. – 232 p.
3. *Coleman A. D.* The Digital Evolution: Visual Communication in the Electronic Age / A.D. Coleman. – Tucson: Nazraeli Press, 1998. – 191 p.
4. *Culture, Technology and Creativity in the Late Twentieth Century* / Ed. by Ph. Hayward. – London: Art Council and Libbey Press, 1990. – 248 p.
5. *Dixon, S.* Digital Performance: A History of New Media in Theater, Dance, Performance Art, and Installation / S. Dixon. – Cambridge: The MIT Press, 2015. – 828 p.
6. *Eco-Visionaries: Art, Architecture, and New Media after the Anthropocene* / ed. By P. Gadanho. – Berlin: Stuttgart: Hatje Cantz, 2018. – 224 p.
7. *Frieling, R.* Media Art Net 1: Survey of Media Art / R. Frieling, D. Daniels. – New York and Vienna: Springer, 2004. – 399 p.

8. *Electronic Culture* / Ed. by T. Druckrey. – New York: Aperture, 1996. – 447 p.
9. *Godfrey, T. The Story of Contemporary Art* / T. Godfrey. – Cambridge: The MIT Press, 2020 – 280 p.
10. *Gombrich, E.H. The Story of Art* / E.H. Gombrich. – London: Phaidon Press, 1995. – 688 p.
11. *Goodman C. Digital Visions: Computers and Art* / C. Goodman. – New York: Harry N. Abrams, 1987. – 191 p.
12. *Grau, O. Virtual Art: From Illusion to Immersion* / O. Grau. – Cambridge MA: MIT, 2003. – 430 p.
13. *Gronlund, M. Contemporary Art and Digital Culture* / M. Gronlund. – London: Routledge, 2017. – 230 p.
14. *Grzymkowski, E. Art 101: From Vincent van Gogh to Andy Warhol, Key People, Ideas, and Moments in the History of Art* / E. Grzymkowski. – New York: Adams Media, 2013. – 219 p.
15. *Hope, C. Digital Arts: An Introduction to New Media* / C. Hope, J. Ch. Ryan. – New York and London: Bloomsbury, 2014. – 288 p.
16. *Internet Art* / Ed. R. Greene. – London: Thames & Hudson, 2004. – 224 p.
17. *Kholeif, O. I Was Raised on the Internet* / O. Kholeif. – Munich: Prestel Publishing, 2018. – 244 p.
18. *LOW FORM. Imaginaries and Visions in the Age of Artificial Intelligence* / ed. by B. Pietromarchi. – Rome: Cura.Books, 2018. – 360 p.
19. *Manovich, L. The Language of New Media* / L. Manovich. – Cambridge: The MIT Press, 2002. – 400 p.
20. *Paul, C. Digital Art* / C. Paul. – New York: Thames & Hudson, 2003. – 272 p.
21. *Rush, M. New Media in Art* / M. Rush. – London: Thames & Hudson, 2005. – 248 p.
22. *Shanken, E. A. Art and Electronic Media* / E. A. Shanken. – London: Phaidon, 2009. – 304 p.
23. *Stokstad, M. Art History Portables Book* / M. Stokstad. – London: Pearson, 2013. – 272 p.
24. *Tribe, M. New Media Art* / M. Tribe, R. Jana, U. Grosenick. – Cologne: Taschen, 2006. – 95 p.
25. *Wands, B. Art of the Digital Age* / B. Wands. – New York: Thames & Hudson, 2006. – 223 p.
26. *Wilson, S. Art + Science Now* / S. Wilson. – London: Thames & Hudson, 2010. – 112 p.
27. *Wilson, S. Information Arts: Intersections of Art, Science, and Technology* / S. Wilson. – Cambridge, MA: MIT, 2002. – 279 p.
28. *Whitechapel: Documents of Contemporary Art* / Ed. by E. A. Shanken. – Cambridge, MA: MIT Press, 2015. – 240 p.