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Art Investigating Science: Critical Art as a Meta-discourse of Science

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1. INTRODUCTION

The issue of the interrelationship between science, technology and art is nowadays one of the most frequent problems of research concerning art and culture in the digital age. The nature of the meta-art and meta-culture discourse today is determined by such categories as intersection and convergence, whereas the idea of art as research and the figure of the artist-as-researcher is a widely accepted and positively valued model by both theorists and the practitioners of media art. In this context, the question about the characteristics of this relationship, possible forms of cooperation, ways and nature of inspirations and influences and about the attitude of both sides towards respectively art as research and science as art seems significant. Joining theoretical reflection with case studies, this paper considers one of the possible models of this interrelationship when art becomes a critical commentary on science and technology. I begin with introducing C.P. Snow's idea of the third culture and I stress the possibility of understanding technological art as an activity, which bridges the gap between the sciences and the humanities. Secondly, adverting to the three models of the art-science-technology relationship I focus on the proposal that apprehends science as a practice which serves for demystification and deconstruction of science and technology. Addressing particular issues, I decide to confine myself to the analysis of art that makes use of, refers to, and comments on the science of artificial intelligence, which, in my opinion, is one of the most exemplary and influential discipline of the twentieth century science. I consider the creative output of two media artists, Ken Feingold and Rafael Lozano-Hemmer, as examples of such artistic approach. Referring to their works I analyze the character of critical reflection on both the classical 'strong' artificial intelligence and the behavioral, or interactionist AI, and the ways of using particular applications of AI such as speech recognition and natural language processing, image recognition, classification and configuration of data.

2. A SHORT HISTORY OF THE DEEP DIVIDE

Although formulated half a century ago the thesis by C. P. Snow about the stratification of culture and the isolation of the societies of scientists and literary intellectuals is still an important reference point for considerations on the state of the relation between the humanities and the sciences. Yet, from today's perspective, the provocative dimension of the description of the gap between the

two cultures that opens perspectives for the future seems more attractive and intellectually capacious than the one kept in a minor tone. Snow was aware of the simplifications and generalizations, which admittedly made his idea clear and intensified its influence, but which could also contribute to the sanctioning and maintaining of the division observed. Therefore, in the second edition of his book, he supplemented the pessimistic diagnosis with optimistic prognosis for the future, pointing to the fact that the gap which separates the sciences and the humanities is not an impassable abyss, whereas the awareness of the difference is rather a condition of a dialogue coming into being, and it makes the emergence of a third culture possible. [5]. Thus, this proposition can be interpreted not as a lamentation upon the state of the divided culture, but as a challenge for those in the two "hostile" camps who exaggeratedly intensified the existing dissimilarities turning the differences in perceiving, interpreting and understanding the world into a wall separating the sciences and the humanities.

The idea of the third culture seems especially interesting in the era of a permanent scientific and technological revolution, which transforms the world surrounding us, our lives, and ourselves almost overnight. On the threshold of the twenty-first century, the constant acceleration of the change, the rapid becoming and vanishing of all kinds of phenomena becomes the basic dimension of everyday life. Our environment and we have become a hybrid in which the borders between *bios* and *techne* are gradually blurring. Living with, in, through and thanks to technology developed on the basis of scientific achievements, we tend to consider this state as natural and obvious, at the same time forgetting about the cultural conditionings of both science and technology. The process of naturalization is fostered by the myth of objectivity of science and transparency of technology that still inspires common consciousness of the information society. In an equal degree it shapes the common image of the nature of science and technology and their role in today's world, and the self-consciousness of a great part of scientists. A complementary superstition situates the activity of the humanities and literary intellectuals on the antipodes of the objective and verifiable scientific worldview, in the field of imagination, emotionality and subjectivity. Yet, as much as the gap between the two cultures does not disappear from the landscape of contemporary culture, a new alternative in a form of the third culture occupies an increasingly important place.

What is interesting, the idea of “bridging the gap” has found a remarkable place in contemporary art. Artists have always searched for new ways and new tools extending the spectrum of aesthetic but also cognitive possibilities of art. The innovative and experimental attitude towards reality constitutes its foundation and at the same time it points to its indigenous affinity with science. “(...) pervasive curiosity, observing nature carefully, organizing that data, theorizing, experimentation, and representing and communicating knowledge and its implications in compelling ways” [12] are these features, which in the opinion of Stephen Wilson marked out the kinship of proto-art and proto-science of Paleolithic and Neolithic eras and despite “the great divide” are the basis of both the scientific and the humanistic worldviews even today. The idea of art as a space in between, as a bridge connecting two cultures is not as much a result of the prehistoric similarities, as it is of the fact that one of the most important characteristics of the last century’s artistic practice is the technologization of art associated with the use of new technologies and media as tools by artists. They opened new aesthetic possibilities but were subject to critical consideration just as frequently. The reflective attitude towards technology created and generally used outside the artistic context, enabled a development of art in which the meta-artistic, meta-technological and meta-cultural discourse infiltrate each other, influence each other and mutually determine each other. The artists who make use of the achievements of contemporary science and up to date technology in their practice can be considered the avant-garde of the third culture, because, existing between the two camps, benefiting from their traditions and achievements, they have at the same time the chance of keeping a critical distance from them. The idea of the artist as a researcher and art as research, the definition of the position of the artist in terms of active, creative but at the same time critical participation in the scientific and technological revolution, and understanding his activity as a “practice informed by theory” [7] have become one of the main approaches towards contemporary digital art. [11, 6]

3. ART AS CRITICAL COMMENTARY

The relationship between science, technology and art takes up different shapes, but the theoreticians who try to systemize those issues point to the existence of three principle models of such relations. [11, 3] The first one, rooted in the traditional or rather modernist ethos of pure, absolute art, is characterized by a utilitarian attitude to the achievements of science and new technologies. Artists turn to them because they enrich art providing them with new tools of artistic creation. Yet, the expansion of the palette of the previous means of expression is neither accompanied by critical reflection nor by the participation in scientific research. The second model is based on a conviction that the artist’s obligation is to initiate and to develop critical debate upon the specificity of science and technology and about their role in contemporary world. In this case the artist acts as a knowledgeable commentator, whereas the artistic practice takes a form of critical reflection upon cultural framework of science and technology. The last scenario presumes the artist’s engagement in scientific research and in the development of new technologies. The artistic practice becomes a mode of experimental inquiry, which results in a development of new dimensions and possibilities for scientific research as well as in enhancement and improvement of technology.

The above mentioned categorization shows a fundamental difference between the first standpoint and the other two models. At the same time the second and the third options, although different to a certain extent, reveal significant similarities. The distinction between them is based on a category of inventiveness and productivity of artistic research and on the engagement of artists in the scientific research. Whereas what is common for both of them is the understanding of art as an activity that firstly requires profound competence of science and technology, and secondly contributes to a better understanding of their specificity and status in the world of today.

Although at a theoretical level the distinction between critical commentary and innovative engagement appears lucid, the praxis of contemporary art proves that both variants often merge, infiltrate and influence each other. Art can stimulate the development of science and technology offering in the first place new, less orthodox and less dogmatic attitude towards research; it can also foster the plurality and diversity of methods, which was postulated and desired by Paul Feyerabend. It seems that there is little controversy about the fact that art can contribute a lot to the advancement of science. Art is able to bring new ideas and offer new prospects for research; it can be a stimulating and vitalizing factor; it can set new directions and open new possibilities. There are numerous historical examples of creative and effective cooperation between artists and scientists, and nowadays we can observe a kind of bloom of various forms of the art-science liaison. Yet, the critical artistic investigation of scientific research, which focuses on and brings forth its cultural conditionings, seems at least just as important. Such reconsideration of the art and science relationship is even more significant because science is still being commonly perceived as a search for objective, absolute truth; as an activity, which is unconditioned and independent of any context. Science, while it is apparently remote and unavailable for an average individual, not only changes her existence but also influences the perception, the ways of understanding and interpreting of reality; it contributes to the emergence of cognitive clichés that most often are unknowingly used in everyday life and determine common knowledge. Art, which at the same time benefits from the achievements of science and modern technologies and situates the issue of their cultural status in the core of creative investigation, allows for a free of idealism and a more rational view on both the metanarration that shapes science, on its hidden, unconscious, and underrepresented assumptions, as well as on the consequences of its everyday applications. In this respect the critical commentary art can be perceived as an activity, which helps to comprehend better and deal with the world that is driven by a permanent scientific and technological revolution. That is why, although it is tempting to get down to the field of art-as-research, I would rather focus in this paper on the works of artists, who introduce a critical discourse on science and technology, taking position of knowledgeable commentators.

Being aware of the nearly infinite openness of the research purpose defined in such a way, in this article I would like to restrict the field of interest to the art that refers to and comments on the issue of artificial intelligence. Several premises, which I will present shortly in the following paragraph, have induced me to make this decision.

Artificial intelligence is one of the most fascinating, mind-challenging, controversial and influential topics in contemporary

science. The research on AI that has been rooted in cybernetics and has become the essential part of the computer revolution, is not just another stream of hermetic science that hides from the sight of the public in the nooks of laboratories but can be regarded as an active force that has reshaped culture at the edge of the twentieth and twenty-first centuries. While its diversity and the scope of the undertaken project make the science of AI rather a name for the array of competing and often contradictory positions, its impact on culture leaves no doubt. The classical branch of AI, often called the “strong AI,” that is more philosophically oriented and focused on questions concerning the nature of intelligence and the possibility of creating intelligent machines, can be seen as the modern reincarnation of the eternal dream of the mankind, which has been expressed in the figures of Golem and Frankenstein. The vision of independent intelligent artificial creatures and intelligent machines has been a challenge for professionals but has materialized as one of the topics of popular culture as well. On the other hand, the more practically oriented “nouvelle AI” which has shifted interest to the issues of embodied and situated intelligence, deeply influenced computer science and technology industry with the invention of intelligent agents and expert systems. These highly specialized autonomous systems have disseminated in nearly all domains of human activity and have become an inevitable, obvious and “natural” part of life in the digital era. While it is hard to imagine the information society without these innovations they shall be considered from critical standpoint as well, for their impact on global culture and the lives of individuals is at least ambiguous. Situated within the discourse of development, modernization and improvement, they are perceived as definitively positive factors, however, while approached from a different perspective, they appear to be tools of surveillance, invigilation and a possible threat to privacy and individual freedom.

As these examples show, artificial intelligence is a discipline of science, which influences contemporary culture to a great extent. On the one hand it addresses the everlasting ontological issues like: the nature of intelligence, perception, and communication, the relationship between mind and body, thoughts and feelings, consciousness and unconsciousness. In this context it can be seen as a contemporary version of the search for human nature. On the other hand, however, various practical applications of artificial intelligence change the everyday existence of millions. For all these reasons, artificial intelligence is involved in philosophical, ethical, ideological, and political discourses at the same time. No wonder that it is of great interest to art as well. Different sub-topics of AI appear in numerous variations in contemporary literature and film. However, I think that in the framework of the article interactive new media art provides especially interesting and inspiring examples of artistic applications of artificial intelligence. There are a few reasons for this state of affairs. Firstly, the technological and procedural basis of interactive art, i.e. information technology, is deeply influenced by or even determined by AI research. Secondly, artists who decide to engage in this field need professional skills and knowledge, which means that they are often involved in scientific research. Thirdly, while being “up to date” with the state of research, they are still outside of science, which makes it possible to refer to the issue in a more free and surprising way. All these features are present in the artistic practice of Ken Feingold and Rafael Lozano-Hemmer. I have decided to focus on a couple of their works because the specificity of their art inclines me to regard them as “artists-as-knowledgeable-commentators.” At the same time, while both

Feingold and Lozano-Hemmer refer to and comment on artificial intelligence, they address different issues in different ways, which allows for manifesting and analyzing the variety of standpoints and strategies within the same attitude towards the art-science relationship.

4. MIND OVER BODY: INVESTIGATION OF GENERAL AI IN KEN FEINGOLD'S WORKS

The issue of artificial intelligence is one of the fundamental motives of the artistic practice of Ken Feingold. Most of the works he has released since the end of the 1990's can be situated in the category of chatterbots, therefore artificial agents, whose underlying feature is the ability of conducting a conversation with one or more human beings, or with similar artificial entities. With regard to this principal feature, the works of Feingold do not differ much from the classical conversational agents such as Joseph Weizenbaum's *Eliza* (1969), or Kenneth Colby's *Parry* (1972). While it is true that Feingold's chatterbots are technically much more sophisticated, the basic outline of their activity is exactly the same: assimilation of the text, its analysis with regard to the keywords, creating associations between the recognized words, expressions and phrases inscribed in the database and natural language processing which leads to formulation of a response. Yet that is where the similarities end. The above mentioned classical chatterbots were an expression of archetypical for artificial intelligence studies' aspiration for producing such hardware and/or software that could successfully represent and simulate human intelligence. Even though this striving was subjected to a principal criticism by the representatives of the behavioral-based AI, and, what is equally significant, the reactions of the users of *Eliza* urged Weizenbaum himself to present the basic doubts towards this trend [8], in the common opinion, the AI research is still combined with the eternal desire of creating an artificial human. Referring to this tradition, Feingold's chatbots at the same time exceed and deconstruct it. In this case, the criticism does not concern the unrealistic assumptions or the utopian character of the main goal of scientific research. It is not directly aimed at technological issues as well, although the specific use of technology that diverges far from the norm is the important aspect of the artist's strategy. Instead, Feingold's works provide a commentary on how scientific research influences the understanding of the nature of human being. In this respect science is not just a search for truth but appears to be a far from neutral and powerful factor that shapes and determines common knowledge and common imagination.

In his works the combination of digital technology, which enables the artificial entities to hear and talk, with their human-like appearance plays a significant role. Chatterbots created by Feingold are often presented as animatronic sculptures in the form of realistic human heads. It may seem that the procedure of anthropomorphization should facilitate engaging in a relation with intelligent agents and contribute to the improvement of communication. The moving, twinkling, attentive, almost human eyes, animated lips, the wince on the face, although almost perfectly imitating the human facial expressions, not only do not abolish the distance between the man and the machine, but, on the contrary, they increase it and cause strange uneasiness. The feeling of estrangement is, to a large degree, an effect of the lack, with which the animatronic heads are stigmatized. For, although

they are endowed with human faces, they are at the same time devoid of bodies. Materializing artificial intelligence in such a shape, Feingold provocatively raises a question about the interpretation of the relation between body and intelligence within the field of the AI research. From a severe, critical perspective he shows one of the pillars of metanarration of general AI - a conviction in the spirit of Cartesian dualism about the superiority of mind over body. He also indicates that the instrumentalization and alienation of the body which is understood as an accidental or even marginal level of human being, is the important consequence of this attitude. Depreciation of corporality on the ground of AI leads to a belief, shared *inter alia* by Hans Moravec, that an abstraction of consciousness and intelligence from the body and its unfettered translocation from a limited biological medium, that is the body, into a technological one, i.e. the computer, is potentially possible. The installation *If/Then* opens other possibilities of interpretation related to this context. If the material body is not essential to human being, then the relation of body and mind has a completely arbitrary character, while the only active factor is, of course, the mind. The body, being only an outer covering of an autonomous intelligence, appears as a space of entirely unrestricted operations, it can be freely configured, transformed or even rejected. Animatronic intelligent heads of *If/Then* ask existential questions: Who are we? Where are we from? Where are we going? Where do we belong? This situation is astonishing and surprising because these questions seem absurd in the context of the material form of the intelligent agents that generate them. The heads do not differ at all; they have no distinguishing marks; they, according to Feingold's own description "look like replacement parts being shipped from the factory". Creating tension between the intelligent agent and its material covering, Feingold points to one of the main consequences of the disembodiment of intelligence. Although the heads are media and carriers of intelligence, they are of no importance for the construction of the subject and for its identity. This means at the same time that the incorporeal subject, identical with intelligence, appears as an entity, free of any material conditionings. The distorted mirror of the head-chatterbots reflects an inclination, inherent in the general AI, for ontological idealism, which emanates far beyond laboratories and infiltrates mass culture with its instrumental treatment of the body.

The extraordinary look of Feingold's chatterbots is accompanied by an unconventional use of language. They are actually very "talkative" bots. The software Feingold designed allows for generating improvised, predetermined only to a certain degree logic sequences of statements. The torrent of words that streams from their mouths seems to have no end; yet it is the way of talking and of formulating statements that is more surprising than the effusiveness of speaking automats. Alongside with logical sentences, the heads can create statements on the border of poetry and chaotic gibberish. Correctly pronounced words are accompanied by inarticulate sounds that form long sequences of repetitions and rhymes. At the same time, the words that oscillate on the border of intelligibility are often uttered in an emotional way. This fact should not be a surprise, considering the specificity of problems that chatterbots bring up. In their statements triviality borders with existential pathos, while the expressions of courtesy are accompanied by questions concerning ontology and epistemology. Last but not least, the heads reveal the ability of self-reflexivity, they reflect upon their nature, ask about the purpose and the aim of living, they can evaluate themselves and the others and also express their own opinions, fears and desires.

When the artificial character of *Head* says: "I am so exhausted. I wish someone would turn me off now." the request sounds almost like a cry for euthanasia.

The conversation with Feingold's artificial characters, or listening to their monologue resembles an encounter with a human balancing on the border of consciousness and unconsciousness, close to mental illness, rather than a standard mode of communication with a digital artificial intelligence entity. The bizarre personality of the heads, which manifests in characteristics of their speech, contrasts with the common idea about such artificial creatures. While it is generally nice to have a computer that will talk to you, the form and the content of the statements, the time and the purpose of pronouncing them is, under normal circumstances, precisely defined and depends on the will of the user. A normal conversation with a computer should be predictable and logic, therefore comprehensible, aimed at a clearly defined goal and effective, whereas the artificially intelligent partner himself should be friendly, polite, helpful, and user-oriented. Such notion of a talking digital entity is a direct result of the tradition of the "strong AI" that defines intelligence in the categories of logical problem solving and rational symbolic representation. Feingold's chatterbots, not fulfilling this pattern or, so to say, overtly contesting it, on the one hand raise a question about the meaning of irrational, unconscious and pre-symbolic forms of knowledge and communication and the role they play in establishing both inter-human and human-machine relationships. On the other hand, they refer to the influence of the reductive vision of intelligence on the ways of perceiving technology as well as on the understanding of human nature. They also question common definitions of such categories as self, subjectivity, and identity.

The eccentric personality of intelligent chatterbots not only provokes to reflect upon the attitude towards intelligence within the limits of the "strong AI", but at the same time it provokes a reflection of a more general character. The heads, making an impression of self-conscious, are also characterized by a disposition to schizophrenic disintegration of personality. They continuously try to establish who they are, they try to construct a coherent self-narration, but every effort of self-definition is futile. This process, although it is present in most of Feingold's works, is a fundamental theme of the installation *Pressure to Speak (House of Cards)*. The chatterbot which is used in this project does not materially exist, it only appears as a screen projection. This virtual head tries to construct its own narration on the basis of words spoken by interactors into a microphone. At the same time it tries to respond to the words of visitors and engages in a conversation with them. The statements spoken by the virtual character oscillate between a monologue and a dialogue. As a result the head cannot keep the coherence of its own story. It loses earlier threads, it is unable to maintain the continuity of the story, it is distracted and it starts its narration all over again. In this work, the chatterbot's dependency on people is stressed in a significant way. The head's own narration is in fact a patchwork which consists of fragments of other people's stories that do not form, because they cannot, any coherent whole. Heterogenic identity of the head-chatterbot is an answer to the vision of subject and identity inscribed into the idea of general AI. The question about the essence of intelligence and its meaning for the forming of subjectivity and identity is substituted by the reflection upon the possibility of the existence of any internally coherent, self-conscious individual. I think that in this way Feingold not only

criticizes a particular model of subjectivity; rather he expresses a fundamental doubt about the possibility of forming any standard vision of it and about the sensibleness of such attempts. As Mark Poster notices, it is no longer possible today to describe a subject as a constant, permanent and homogenous entity. One, continuous narration, which could subsume the whole story of the subject, is substituted with fragmentary, scrappy, overlapping each other, often contradictory micronarrations, whereas the category of identity describes “an individual who is deeply confused about who he or she is.” [4: 7] Can the aim to form an equivalent of human existence be justified in this context? Does it not take up a form of exorcism on hybrid reality in order to regain the lost unity? Is it not a melancholic look in the direction of broken metanarrations? Ken Feingold, making a subversive use of chatterbot technology initiates a discussion not only about detailed issues, but points out above all to the philosophical assumptions of general AI and their implications for the understanding of the nature of man. At the same time he expresses doubts whether it is reasonable and useful to search for an answer to such general issues in the fluid, postmodern world. His schizoid, bodiless, animatronic intelligent heads can be seen as caricatures of “good” chatterbots. The myth of pure intelligence is deconstructed by means of their hyperbolic form. However, while they can be seen as a critical commentary on the foundational myths of AI science, they can be as well understood as a provocation aimed at disturbing cultural clichés, prejudices and superstitions that shape the image of artificial intelligence in the realm of popular culture. In this respect, Feingold’s works analyze the relationship between scientific vision and common knowledge, which appears to be on the one hand its vulgarized version, and on the other a distorting mirror, which helps to notice contradictions and troublesome aspects of scientific research.

5. THE SYSTEM KNOWS BETTER: EXPERT SYSTEMS AND DIGITAL SURVEILLANCE IN RAFAEL LOZANO- HEMMER’S INSTALLATIONS

It is hard to imagine the functioning of today’s world without the common use of intelligent agents and expert systems. It is even harder to define all the fields in which those forms of artificial intelligence play an essential role, all the more that they usually function in the background, and they fulfill the tasks they were charged automatically and imperceptibly. They are perceived and evaluated through the prism of effectiveness. Created for completely practical purposes, they not only make the execution of numerous tasks easier, but often replace humans, taking over these fields of activity that were earlier reserved for human agents. This is what happens *inter alia* in the field of digital surveillance. This case is also particularly significant for two reasons: firstly, because of the fact that the use of the AI technology has led to a radical transformation of the techniques of surveillance, and secondly, because the digital surveillance has become one of the fundamental determinants of contemporary culture and it at the same time greatly influences the shape of the information society. Modern surveillance functions on the basis of a network of searchable databases that enable the linkage of individual data resources, gathered by different subjects for different purposes, and facilitate the access to heterogeneous information concerning particular subjects. This is how the surveillance assemblage emerges. [2] Its work is based as much on the collecting and processing of data as it is on profiling and

constructing data double of reality. Because the character of those processes directly depends on the specificity of intelligent agents and expert systems, the thesis that it is exactly the practice of digital surveillance where the influence of artificial intelligence on contemporary culture and society is especially manifested, seems justified.

Such issues are some of the fundamental themes of the artistic practice of Rafael Lozano-Hemmer, yet I think that the three of his interactive installations *Third Person*, *Subtitled Public*, and *Blow Up* that were released between 2005 and 2007 seem particularly interesting and worthy in the context of this paper. Image recognition and processing system that cooperates with the linguistic database were used in the first installation. Detecting and tracking the presence of the viewer-interactor, the system generates and presents on the monitor her portrait, which is built of hundreds of verbs in the third person. What is vital in this case is the dialectics between the visual similarity of the generated display figure and the complete randomness of words that this virtual image consists of. The specific relation between the iconic representation, which indeed is a schematic and simplified, yet an analogous visualization of a real person, and her linguistic representation, which on the contrary is abstract and arbitrary, reveals the limits of both ways of representing reality. The first one that operates only on the basis of visual data enables the catching of an outside likeness only. In the case of linguistic representation, its complete arbitrariness comes to the foreground, because the choice of words is done automatically and the attribution of certain verbs to a particular person has nothing to do with her behavior whatsoever. The absurdity of the linguistic description resulting from automatism of data processing and complete lack of reference with the portrayed person inclines us to reflect upon the mechanisms that control the process of data processing and the procedures of creating data double. The real likeness, the rooting in a biography of a certain person, the context of particular experiences and life lose meaning in this case; they are not a point of reference anymore. The resemblance gets a thoroughly conventional character at the very moment when the simulation, profiling and data processing performed by specific expert systems become the basic practice of surveillance. Like all systems of this type, also this one, constructed by the artist, has a precisely defined goal and procedures of achieving it. From the practical point of view, they seem easy, not to say trivial; however, the specific configuration of individual elements of the work opens possibilities of interpretation that far exceed technical effectiveness. The tension between the iconic and verbal representations, fundamental for the structure of *Third Person*, accentuates the paradoxical nature of data double created by the system, which resembles and differs from the real person at the same time. Still, even if it is arbitrary, abstract, artificial, and only to some extent related to the real subject, the virtual clone casts a real shadow covering or even replacing the flesh and bone human being. In the culture of surveillance assemblage, the question about the rules of processing information and principles of the functioning of autonomous intelligent systems that generate information clones of people becomes a question of an existential character.

While *Third Person* can be regarded as an analysis of the nature of digitalized data-oriented surveillance and mechanisms of crating data-double, *Subtitled Public* investigates how the use of intelligent machine in the practices of digital surveillance affects the existence of real people, influences their identity and modifies

their presence in the public space. Again, the linguistic description has an arbitrary and random character but in this case there is no direct relationship between a person and the description she was attributed, and any form of likeness disappears. What is more, as much as *Third Person* used a complex description, which to some extent expressed the specificity of the ambiguous, multidimensional, internally incoherent and liquid postmodern identity, the *Subtitled Public* is a brutal manifestation of a schematizing power of digital invigilation. Each member of the public is tracked and subtitled with a single word (again verb in the third person) generated by the system and projected onto her body. Thus, the viewer-interactor is brought to one, randomly selected, word. What is worse, there is no possibility of getting rid of a once given word. In this way, she becomes a slave of linguistic designation. The very act of subtitled takes a form of stigmatization. Together with the appearance of the word projected onto the body of the viewer-interactor, her real physical presence is shifted to the background and loses meaning in confrontation with the arbitrary description generated by the outside power on the basis of unknown rules. Fighting it brings no results, just as all the efforts of freeing oneself from the importunate emblem are futile. However, there is just one effective way to get rid of the stigmatizing verb – touching another person within the limits of the installation space. At first it seems that the body is a tool that liberates the subject. Unfortunately, the relief associated with the riddance of the uncomfortable and bothersome linguistic virtual companion is only momentary. For touch leads only to the exchange of the descriptions attributed to two different persons. Verbal descriptions turn out to be completely independent, they are not ascribed to any definite person, they translocate from one carrier to another. Therefore not only the behavior of particular persons is unimportant, it is just as meaningless how the person is described. It is only the process of giving meaning to the human existence by means of an autonomously, automatically and unconditionally working system that counts. As Lozano-Hemmer (2005) puts it himself: “Surveillance never tires of taking possession of our words and images. In my recent works I ask what would happen if all the cameras became projectors and gave us words and images rather than take them away from us?” [1]

Another Lozano-Hemmer’s project entitled *Blow Up* refers to the above mentioned reflexivity of observation and projection. It focuses on the consequences of enhancing visual tools of investigation like traditional CCTV cameras with intelligent digital technology. The work points to the dialectical tension between the past-oriented analogue observation and the simulation of the future, representation and profiling as well as recording and processing of data. The work consists of the video camera, which records the image of the viewer-interactor, and software agent that generates 2400 alternative views of exhibition space, which are based on the original footage. The viewer observes the process of fragmentation and multiplication of the root image in real time. Her face falls apart into small pieces that systematically grow in number, cover and finally erase the first image. Here Lozano-Hemmer stresses the danger of inflation of surveillance and raises a question about the effects of algorithmic automation of the processes of gathering and processing of data.

The mentioned works of the Mexican artist can be regarded as an analysis of the ways of applying intelligent technologies in the context of surveillance and at the same time they initiate a reflection upon the consequences of their common use. On the

one hand, the advanced surveillance technologies that are supposed to guarantee precision, correctness and effectiveness of observation, contribute to information overload. On the other hand, the automatic data processing systems that are to meet this process make the credibility of data obtained through them problematic, for they function on the basis of predetermined rules. Designing the expert systems and modeling the functioning of intelligent agents does not occur in a cultural void. On the contrary, the formulation of what the subjects of the operation will be, how the data will be obtained and what the procedures of their processing will be depends on the decisions of their originators and principals. Artificial perception, deduction, reasoning, problem solving and knowledge representation are not neutral and transparent, they are nothing but extensions of certain interests, value system and specified ideology. At the same time, the dictate of effectiveness forces the simplification of the functioning of the system. This fact has a special significance in the context of digital surveillance understood not only as mapping, but also as the process of profiling reality. Contrary to Feingold, Lozano-Hemmer focuses on practical applications of artificial intelligence. His installations disclose and analyze “the other side” of the surveillance society by means of subversion of various technologies of digital invigilation. They function as a kind of laboratory where certain features of digitally enhanced surveillance are being pushed to the limits and subjected to critical investigation. He questions the myth of effectiveness, and presents possible consequences of formalization and automatization of procedures of collecting, tracking and processing of data. He asks what may happen if we invest too much trust in intelligent machines and allow them for taking control over reality and over our lives. As Lozano-Hemmer states referring to Manuel DeLanda: “It is literally about technologies designed to discriminate based on a series of innate prejudices.” This new intensification of surveillance is extremely problematic because, in the words of Manuel DeLanda “it endows the computer with the power of executive decision making.” [1]

6. CONCLUSION

“There is no objective nature anymore, separated from social construction, and there is no absolute art any more, separated from social construction. Art and science meet and converge in the method of social construction.” [9: 174].

Both science and art, while based on different methodologies, are an expression of human need for knowledge. However, epistemological dimension of these forms of cultural activity is inseparably connected with their inherent creative drive. They not only reflect and represent reality but influence and model life, the world and the human being herself as well. The works of Feingold and Lozano-Hemmer can be regarded as examples of art as critical commentary, which deals with cultural status of scientific research. This kind of art investigates science and technology as forces that determine the shape of the modern world. The art which deconstructs the scientific worldview and situates it in the broad cultural context contributes on the one hand, to self-awareness of science itself, and on the other it fulfils an adaptation function. It translates the hermetic discourse of science to a more intuitive language of artistic expression and in this way makes it easier to comprehend and more accessible for the general public. Above all, the works of Feingold and Lozano-Hemmer offer critical perspective owing to which we can perceive the

ideological side of what seems to be objective, transparent, natural and obvious.

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