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The first neuroopera ‘Noor’: transparent brain and the end of humanistic ethics?

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ABSTRACT

Noor, the first in the world neuro opera with a libretto by a Russian media poet premiered in Run Run Creative Media Centre in Hong Kong on 18 May 2016. The opera features visuals, music and libretto activated by the brainwaves of the performer wearing a wireless EEG set. Noor discusses the issues of idealism, sacrifice and the autonomy of self under the surveillance of increasingly invasive and sophisticated data technologies.

Noor premiered under the aegis of the International Society for Electronic Art (ISEA). The neuro opera was developed by an international team of artists: a performer Saba Arat (Turkey), a composer Taras Mashtalir (USA), a librettist Natalia Fedorova (Russia), a programmer Tommy Martinez (USA), a choreographer David Leung (Hong Kong) inspired and directed by Ellen Pearlman, William Wong (Hong Kong) served as technical director. (Pearlman, 2017)

The story is a biography of Moscow-born Noor Inayat Khan, a Sufi Muslim Indian Princess who served for three months as a wireless operator in Nazi-occupied Paris, but was captured and murdered in Dachau. The opera can be seen as the development of neuroimaging data techniques but in particular as resistance to Orwellian panopticon dictatorship. Instead of having a transparent brain at the service of the state, it is the performer who regulates with her brainwaves transmitted via EEG headset the sonic environment, libretto and videos. The brainwaves are displayed live as the performer interacts with the audience in a 360-degree immersive theatre. The opera creates a case for the use of EEG to build a narrative and to answer a sociocultural question: is there a place in consciousness where surveillance cannot go? Another variation of this question: what makes for the consciousness that can possibly be protected from invasion by means of the mental force of willpower.

The opera worked with the bodies of the performer and participants creating a feedback loop through movement, gaze, touch and speech – visibly changing performer’s brainwaves. The first performer and second performer/narrator reveal one layer of the story in the dialogue. This dialogue leads to an emotional reaction in Arat’s brain that is triggered by the EEG. The viewer can experience the story and at the same time see how the story is experienced by the performer.

Technically the opera comprises three sets of databanks: the sonic score, the pre-recorded libretto and the videos. Each databank corresponds to the emotions of excitement, interest, meditation and frustration. The text database I composed comprises
short phrases or words, primarily based on Noor’s biography that I read aloud and recorded. For instance, *Anger* (‘a lie’) would include Nazi crimes (‘dig the corpses of the shot before being shot’), practices of Islamic law (‘hand cut for theft’), etc. The mechanics of the database do not allow the audience to learn the story, but to recognize, or reconstruct a story through reading this narrative montage. Different linguistic and ideological layers can be combined into one set. This allows for rich and dense texts that remain quite non-narratival and cryptic.

The performance also involved a kinaesthetic reading of the bodies, both for the performer and for participants by creating a responsive feedback loop in which the performer’s interactions with the audience, through exteroceptive senses – seeing (visual), hearing (auditory) and touching (tactile/haptic) and an interoceptive senses of proprioception (movement and position in space) – visibly changed the performer’s brainwaves. Brainwaves are displayed as the narration is happening and the performer approaches the members of the audience. This performance can be seen as recreating the story from within, changing the first person perspective into first person experience.

Obviously, in ‘Noor’ reading Saba Arat’s brainwaves was a voluntary choice of the performer. Still it required a different level of sincerity and acting from her since the way she felt about this or that part of the story was fairly obvious to the public. She not only had to give visual impressions of feeling angry, for instance, but she had to train herself to get to that emotional state. The concept of emotional acting can be introduced here in order to describe this new type of performance. A performance in which, on the one hand, it is necessary to act in your brain, on the other hand, paradoxically enough, this acting is measured by the neurointerface, rather than by the human audience solely. Viewers could compare and verify their reaction with the reaction of the performer thus forming a collective experience of sensing within a given context. In case the feelings are synched a new type of transformative collective sensitivity can be observed, one that is reflecting and regulating the content.

Biofeedback was initially used as a therapeutic treatment for stress disorders in which patients were trained to modulate alpha waves. Artists such as Alvin Lucier, Richard Teitelbaum and David Rosenboom have been working with the control sources of biofeedback and brainwaves to create sound art since 1960s. Recent experiments have been done by Marina Abramovic (‘The Magic of Mutual Gaze,’ 2011), Yehuda Deunyas (‘Ascent,’ 2012) and Lisa Park (‘Euonia II,’ 2013). In Russian neuroart, human–computer audio-visual systems interact and the human performs – a variation of feedback developed in the last three years. The most important attempts in this field, apart from Noor (2016), are ‘Neurointegrum’ (2015) by Yuri Didevich, ‘Neurosync Poetry’ curated by Ivan Ninenko and Elizaveta Zinovyeva (2017) connected culturally with the New Stage of Alexandrinsky Theatre in St Petersburg. Another typological connection that can be traced in these works is an attempt at aesthetic animism (Johnston, 2017), or creating a symbiotic organism uniting a number of people and machines with brain computer interface (BCI). In all of these cases a performance demonstrates this hybrid organism in action to the public.

While the encephalography is quite an old technology that oftentimes gives ambiguous results, adjustment for a concrete person allows for revelation of otherwise hidden psycho-emotional states. Paradoxically enough, only audio-visual embodiment allows the performer and the spectators to get feedback from the brain that is impossible to sense.
otherwise. According to Didevich, it is also hard to prove that it is the cognitive commands straight from the brain that operate the audiovisual systems. Most artists have been disappointed with neurointerface use after initially trying it with enthusiasm. It is also hard to explain to the dancer that the event is happening in his or her head, they lack the feedback in it. There is only one way to give brain the feedback – to visualise and sonify the brain. Using motor images as a means of control reveal the kinetic nature of generative sound and video. That gives the viewer the possibility not simply of removing the fourth wall, but also of witnessing the brain theatre of another person’s mind, thus making the brain a performative space. Neurointegrum teaches how to think of the implications of psycho-emotional reactions in the process of interaction with the audio-visual systems.

Revealing the inside of the brain obviously poses a number of ethical questions, the most burning of which would be the loss of privacy. In addition to the creation of such cybernetic organisms, this also makes the shifting of personality borders possible. In other words, where do the qualities of the human actor merge with the qualities of the BCI? In light of such a fragile border, is it not time to ask questions about the rights of this living matter? Generally speaking, the brain opera allows us to discuss three major ethical concerns: thermometre syndrome (Cassou-Nogues), which implies delegation of emotional verifications to machines; threats of neuroimaging for writing and other traditional forms of expression; and, certainly, transparent brains can be used by totalitarian governments and corporations to gain full control of human subjects. Neuroimaging might cause the possibility of eliciting particular information from the brain (passwords or classified information of different nature) irrespective of the subject’s will. Biocomputing in the case of ‘Noor’ presents one of the scenarios that can lead to a human civilisation where people might be deprived of fundamental human qualities such as cognitive and emotional judgement. Once these are delegated to machines, humans might no longer believe that they feel or remember anything and might have no confidence challenging machinic representations of their feelings and memories.

The loss of significance of writing and speaking can be seen as another issue of ethical concern. One of the fundamental goals of writing is translating the emotional states and cognitive experiences from one person to another in a socially acceptable way, and readable by this other form. However in the view of network theory, human language as such can be seen as a communication system – cities, and computer networks, as well as the human brain can be seen as new types of life forms sharing the same morphological qualities. One of the arguments in favour of this view is the fact that power-law distribution applies to networks as diverse as genetics and the Internet (Barabasi, 2010). Sporns (2010) applies similar analysis to neurological evolution. Neurological structures developmentally self-organise in ways explicable by network theory. So do the size of cities, popularity of artists, distribution of wealth, solar flares, and so forth. Johnston proves an aesthetic animism paradigm through which language can be seen as a moving system:

The more that language is entangled with kinetic, intelligent, embodied, and responsive letterforms extruded onto screens, the more likely it is that we may forget, collectively, a time when language did not swerve to avoid us, try to serve us, and dance to capture attention. Its presence may still be largely (in daily life) transparent, but its transparency will be as the earth underfoot, a massive living organism that supports and guides. Imagine a mountain getting up and walking toward a horizon. That is the situation now. A mountain is walking
off. Living language is a nontrivial development in the history of communication. (Johnston, 2017, p. 56)

In light of this view, it is not the loss of traditional forms of linguistic expression in favour of embodied language that can be seen as a developmental stage in the way existing at the moment. It can simply be releasing already existing possibilities that grant new ways of expression, not necessarily exclusively human.

The brain of another person has always been a mystery that can neither be expressed by means of communication, nor sensed physically. In order to see inside the brain surgical intrusion is needed. However, recent advances in human neuroimaging (Haynes & Rees, 2006) have shown that it is possible to accurately decode a person’s conscious experience based only on non-invasive measurements of their brain activity. This introduces a new stage of transparent brains in science, social communication and history. This form of reading brainwaves instead of reading encoded graphemes and phonetical symbols can be called biocomputational writing and reading.

Hiding emotional states seems to be as essential as revealing those in social communication. Having thoughts being read has long since been one of the main utopian fears of total control. Not being able to either hide or express at will both leads to the loss of what was thought of as fundamental human capacities and rights – the right of privacy. Or at least we could think here of the rights of a subject’s personal mind to control its emotional deviations and hold them inside. In order to continue social communication in spite of certain differences in emotional states requires hiding the latest. Fully visible emotional states can lead to a radical change of social rituals and practices such as negotiations, family gatherings and dating. Imagine knowing exactly what a person you are with on the first date is thinking. This would minimise matching to the lowest spectrum of parameters: excitement, for example, as the only necessary component. A complication here might be that we are thinking the way we are in a contemporary paradigm due to the practices of speaking and writing. The raw material of first impressions and feelings provokes the thinking process without fully defining it. Thus, a telepathic being able to skip the rationalising stage might lead to a completely new society with new rules of human conduct.

Neuroscience’s presumption is similar to other forms of reading body features or reactions that are supposed to reveal a subject’s thoughts, feelings or memories more competently than the subject him- or herself would ever be able to. Basically, emotions in this case are equal to certain movements, transition from one state to another. This condition of trust to the objectivity of the machine marks the end of humanistic paradigms by which the subject has the final say. Rather, in an anthropomorphic universe where human judgement and emotions are the ultimate measure of value, their subjectivity would be being itself. And a fact worth keeping in mind is the semantic structures of cities, and social and computer networks – we may indeed already be living in such a universe.

The objective data turn, being discussed within the speculative realism paradigm, is one of the conditions proved by the brain opera ‘Noor’. The objective turn involves a change of structural relations and communication modelling between subject–object towards object–object relationships. The new type of living matter requires new types of legal and ethical systems. This implies delegation of more power to objects, thus stripping
some of power from human subjects (or objects, in this case). Here, the existing rules of humanistic ethics may be revealed to be bankrupt or irrelevant.

References

Digital behaviour and ethics: performativity of data in Russian media art
Eugenia Samostienko and Irina Mironova

*ABSTRACT*

Media art is an intensively developing zone, which allows us to rethink the relationship between data and ethics. More recently, only in Moscow, two major exhibitions took place in which a special role was assigned to media art: *Hosting the Inhuman and Synthposium*. Lately, participants of the 7th Moscow Biennale were announced. It is noticeable that majority of Russian artists included in this list are closely connected with the field of media art. Which tendencies do problematize digital behaviour and – as a consequence – the ethical dimension of ‘Data Turn’? What is the difference between ‘reflectory’ and ‘reflective’ media art? And in which way nowadays are new types of resources, rethinking the urban cyberinfrastructure, and search for new cognitive effects changing our experience?

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Media art has been developing in Russia since the 1990s. At that time, media art was an alternative to institutional art. For example, Alexei Shulgin created the first digital gallery of painting on the Internet. Nowadays, according to him, media art has become mainstream (Kartseva & Kan, 2014). Everywhere, we can see ‘reflectory’ digital art, which is more entertainment than platform for elaborating a new language. The showiness of such works comes to the fore, while the very problematic status of digital data is veiled. A few years ago Alexei Shulgin and Aristarkh Chernyshev created ‘Electroboutique’, which means that they rethought institutional status of media art. It could be clearly demonstrated, for instance, by the program of the 7th Moscow Biennale, which has...