Digitalization, Communication, and Robotics

Shoji NAGATAKI

Digitalization can change our way of communication, creativity, and thought in many ways. Such a transformation is partly due to the characteristics of digital devices.

Shibata argues that our communication can only exist presumably on the basis of evolutionary constraints imposed on us. If a robot were to be able to engage in communicative interaction, features corresponding to those constraints have to be technologically implemented in it. Shibata tries to identify those constraints in the framework of folk psychology.

Liberati focuses on digital devices, such as a sex robot and a nursing-care robot, with which we can make an intimate relationship on the level of the sense of touch. In order to understand the novelty of these devices, he analyzes the historical transformation of meanings and values in that relationship from a viewpoint of the generative phenomenology.

Hashimoto argues that we are forced to "swallow the bullshit" which misleads or deceives our senses in the digitalized world. To be creative and critical to keep our humanity in such a world, we should rethink the digital nature of human language, he says.

Nagataki points out that we can become aware of our own vulnerability by having irrational experiences in the digitalized world. Such a situation, he holds, should be interpreted positively in terms of communication and thought.

Title: What makes the "communication per se" possible among autonomous robots?
Author: Masayoshi SHIBATA
Affiliation: Kanazawa University

What kind of contents would autonomous robots communicate with each other? What would be required for them to be a Mozart or a Dali?

I think those two questions reflect a common situation in deep level humans have been facing through their evolution. For humans, considered as a contingent existence only with their limited perceptual and reasoning abilities, something happens to be called "beautiful" just because it has some adaptive values for human survival. "Beauty per se" resides in or is reduced to "seems beautiful", namely certain activities of human brains. Therefor robots would have no troubles with equipping perceptual devices to detect a physical property of "beauty per se" because there is no such property in our world. So far so good, from the aesthetic anti-realist point of view. So, robots could have enough abilities to make or perform any work of art found in the human history. But robots are originally free from the evolutionary constraint and in principle technologically "omnipotent". In other word robots are too free and too powerful to be a Mozart or a Dali.

This situation reflects a general truth that art requires essential limitedness, i.e. creativity resides in finiteness. Let's imagine many autonomously living robots and their communications. The case seems essentially the same as art. If we didn't assume any constraints in their lives such as ones imposed by evolution, we wouldn't find any points in their communications. Then, what fundamental constrains should be there for robots' communications? I will propose an argument that the intrinsic constraint here is the framework of folk psychology in which robots are both the subjects and the objects of such explanations.

Title: Intimacy and robots
Author: Nicola LIBERATI
Affiliation: Shanghai Jiao Tong University

Abstract:
Intimate technologies are becoming pervasive. Technologies do not merely peep under your skin by capturing our actions, but they are used to trigger emotions and to be empathically linked to us. Examples of empathic digital technologies are love robots, which are devices designed to be in a romantic relationship with human beings and care robots designed to provide company to lonely patients.

Our society already uses these technologies, but their effects on who we are are not clear yet. Some researchers are afraid by their introduction since they see it as a threat to our "humanity," while others are enthusiast thinking we are facing a revolution in how we deal with machines. This presentation will not focus on an ethical assessment of the technology, but it will work on the analysis of the relations binding subjects and technologies to understand the novelties introduced by the devices. Thanks to a phenomenological analysis of value generation in Husserl, this presentation will tackle the change in meanings and values subjects give to relationships with other people the moment such technologies are present in society.

Title: Be creative and critical with digital nature of language in digitalized world
Author: Takashi HASHIMOTO
Affiliation: School of Knowledge Science, Japan Advanced Institute of Science and Technology (JAIST)

Digitalization has two effects. One is to copy products with virtually no deterioration. Therefore, products may rapidly lose their value. To survive in such a world, we need to promote creative capacity. The other effect is to raise resolution, as happened in expressions in visual and auditory sensations. With the development in cyber-physical systems, tactile scores, smell and taste informatics, and related technologies, other senses will soon benefit from digitalization. The same is true for robots as android technology advances. In his novelette "TAP," Greg Egan describes the future of VR as a world where

you must swallow everything expressed and you cannot think "this is … bullshit." We cannot avoid swallowing everything for sensations closer to the embodiment, such as tactile, smell, and taste, and emotional facial and voice expressions since we directly accept such expressions without interpretation. Digitalization eventually brings a world where ultra-high-definition expressions are replicated, overflowed, continually devalued, and deceive all our senses. To be creative and critical in such a world, the digital nature of language, i.e., consisting of discrete elements having meanings (symbols), plays a role. We can create new concepts with hierarchical complexity by recursively combining various elements. When such complex concepts are externalized for communication, recipients must re-create and interpret the hierarchical complexity inevitably by themselves since the hierarchical structures are lost in linearized externalization. This uncertain and hassle characteristic is not conducive to communication but gives us a pause to think "this is … bullshit."

Title: Digitalizing humanity?
Author: Shoji NAGATAKI
Affiliation: Chukyo University

Digitalization is changing our communication and even thought patterns. This trend is sometimes referred to as the digital revolution. However, it has raised a lot of concerns. Digitalization may force us to speed up, sometimes without due thinking, our decision-making. Actual relationships with others are truncated to a minimum, and we may not even know who we are dealing with. Empathy and consideration for others, i.e. the sense of trying to be moral, diminishes, while the impetuosity of holding others accountable grows. Digitalization may even affect the meaning of humanity.

It is impossible to turn the clock of digitalization backwards. Will we become a frivolous entity floating in cyberspace? However, there is an undeniable reality that we are not free from absurdity and irrationality around us in that world. Such experiences force us to realize that we are vulnerable beings. What is good, what is beautiful and what is worth? Against the power of digitalization, we get to know that it takes time to judge them.

This presentation focuses on our intrinsic vulnerability, referring to phenomenology, (post)phenomenology, McLuhan's media theory, and various contemporary discussions on digitalization. By describing lights and shadows of the digital revolution, I propose a thesis that our embodiment gives us a good limitation on our way of thought and communication.