Merging of Code and Matter: MetaGarden by Tanja Vujinovic

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We now live in a time of exponential technological development, a time when imaginative constructs of science fiction – virtual environments, humanoid robots, artificially grown tissues and body parts, artificial intelligence (AI) and artificial life (AL), body implants and extensions, and genetic modifications – have become a part of our scientific and social reality. Mediated by technologies we use on daily basis, our sense of self and the world we live in is dramatically changing as the boundaries between virtual and physical reality collapse. Direct experience is transcoded into and expanded through digital representations and simulations while virtual constructs and modes of existence permeate and transform the material world and our perceptions of it. We exist at multiple intersections of virtual and physical realms, stripped of any stable reference point or fixed meaning, and caught up in the process of cyborgization, [4] [1] i.e. the process of becoming posthuman. [7] [13] In essence, the very notion of human is being redefined, decentered, and reinvented through human-machine couplings and interactions.

In Tanja Vujinovic's artwork the focal point is the relationship of body, mind, and technology. She uses new media technologies both as the medium of production and subject of her work. Whether through interactive installations, virtual environments, sound, or video, she explores phenomena and issues brought about by ubiquitous use of (new) media technologies, such as our attachments to gadgets, machine anthropomorphization, noise, signal processing, privacy, data collection, virtual avatars, human augmentation, and life enhancement through technology. In the *MetaGarden* project she explores the notions of life, agency, and subjectivity of human and nonhuman actors.

New media technologies and biotechnologies have sparked hype, especially among transhumanist thinkers, futurists, and DIY practitioners, about longevity through uploading the mind into virtual realms, technological augmentation of the body with implants, prostheses or biochemical alterations, and creation of conscious artificial agents. It seems as if modern society has stepped into a future envisioned by Edward Morgan Forster in his short story "The Machine Stops", [2] in which people are completely physically isolated from one another but at the same time constantly connected through their screens while being sustained by the Machine. It provides and regulates their air, food, shelter, and access to all the information there is. The omnipresent and omnipotent Machine contains everything, and existence itself depends and relies on the Machine. Such visions of technological salvation are not limited to fiction but have always been integrated in philosophical, theoretical, scientific, and popular culture narratives, as well as in art practices. Historically, every breakthrough in technological development has been followed by predictions about future potentials of the technology at hand to enable human empowerment and longevity. [5] In that sense, the time we live in is no exception.

While critical posthumanism argues against the legacy of Idealist thought and the anthropocentric worldview, allowing agency and subjectivity to non-human entities [13], transhumanism retains the centrality of the human figure and proposes technological human enhancement. Transhumanist techno-enthusiastic rhetoric may sometimes resemble religious exaltation, which is most evident in the transhumanist visions of technological singularity, where machine and human intelligence merge into a superintelligence that will transcend human biological limitations [10] and give rise to superior posthumans and/or superintelligent artificial entities. However, despite its technological salvation "tone", transhumanism should not be disregarded easily, for it opens up debates and speculations but also techno-scientific research concerning the conversion of NBIC technologies (nanotechnology, biotechnology, information technology, and cognitive science) with multiple possibilities of human enhancement. [12]

In her research for the *MetaGarden* project, Vujinovic explores the post- and transhumanist ideas through history of science and technology. She does not look for the origins or linear progress in historical metanarratives, but takes

instead the Foucauldian genealogical approach [3] to trace the complex network of seemingly unrelated phenomena across time and space. Genealogy looks into discontinuities, nodes, networks, coincidences, and interrelations, and even includes absences, potentials, dispersions, and deviations, often contradicting the dominant cultural narratives. In this manner, the *MetaGarden* incorporates subtle, diverse marks of perpetual interplay between biological and artificial life and presents a distinctive contemplation on scientifically and technologically mediated wellbeing.

The "MetaGarden:Ethanol" [15] installation consists of a container of alcohol, Object A containing charcoal particles, and Object B immersed in a small pool of "processed" alcohol circulating the installation. Throughout centuries, alcohol (and its various distillates) was considered the quintessence of life, the purifier, the water of life, and it was mainly used for medicinal purposes. Objects A and B are mannequin-like torso figures connected by tubes through which alcohol runs. In the alcohol circulation process, multiple distillations take place, thus purifying alcohol into the "quintessence of life" that drips into the container where Object B is immersed. Object B's perpetuation of life is expressed by the bubbles it blows. Although bubbles can be read as the basic life function of breathing and may seem random, they are thoughtfully designed. For the purposes of this installation, the artist used a text-to-Morse code translator. The signal in Morse code, i.e. the combination of long and short signals, is recorded and transferred to a microcontroller through which Object B repeatedly forms the utterance "I am still alive" in bubbles. The utterance is taken from the famous conceptual artwork "Telegrams: I Am Still Alive" by On Kawara, who used the impersonal medium of the telegram to send this message to around nine hundred people for over three decades. The microcontroller also registers the presence / absence of liquid in Object B's pool. Distilled alcohol as "quintessence" sustains life. Once it evaporates, the signal of life it emits dies. The installation invites us to contemplate topics such as bringing artificial agents to life (from the Golem to today's humanoid robots) and cyborgization of humanity through the creation of artificial body parts to keep perpetuate our lives.

"MetaGarden:Machine" [16] consists of both physical and virtual elements. It was developed from researching ethnobotany, popular culture, traditional herbal medications, and the use of substances considered to have health improving properties. Today, some of them are regularly used as supplements, while those that proved lethal are forbidden for human use. For the "MetaGarden:Machine" installation, the artist collected a trove of available substances with medicinal properties, including sage, chamomile, lavender, rosemary, cannabis sativa, gold, silver, semi-precious stones, sea salt, shiitake mushrooms, ginseng powder, and others. In small amounts, she soaked them in a solution of alcohol. The "machine" further dilutes this mixture and purifies it through Objects A and B, presented as fragmented body parts in this installation. Finally, the solution reaches an evaporator, which disperses it into the air, giving the visitors an opportunity to breathe in the scent of its beneficial properties. Attached to the installation is a multisensor camera that translates each visitor's body motions into unique virtual objects and then transfers those into digital fields projected on the wall. The objects consist of combined basic geometric forms and resemble Suprematist paintings. It is not coincidental that the artist makes a reference to this particular art movement in the installation, given that Suprematism is known for, among other things, developing particular interest in non-Euclidean geometry and forms in motion, and evoking transcendental experience.

"MetaGarden:Bots" [17] represents multilayered symbolic elements in both physical and virtual parts of the installation. The installation as a whole invites us to contemplate in the garden resembling Chinese scholar gardens with carefully arranged natural elements like trees, flowers, rocks, ponds, etc. or Japanese Zen gardens with rock arrangements and raked gravel or sand. The elements that constitute these gardens form ideal miniature landscapes that symbolize harmony between the human and nature, but they also stimulate inspiration and higher states of consciousness. The creation of such gardens normally presupposes human agency to carry out the careful arrangements by following strict rules. Here, however, the artist creates a radical inversion by assigning this task to small rock-like robots as autonomous agents in motion to perpetually re-create the physical garden through movement and interaction. Moreover, moving rocks

and the ever-changing scenery disrupt the stillness of traditional gardens, and yet the installation does not lose the quality of its meditative feel. The question is whether such motion disrupts the meditative state or not, as well as how this "garden in motion" affects and alters mental states and cognitive processes. We may draw a parallel here with the interrelatedness of meditation and physical exercise such as martial arts. While meditation implies stillness, martial arts are considered to be meditation in motion. Therefore, motion does not undermine meditation and contemplation, but rather induces qualitatively different meditative states.

As in some of Tanja Vujinovic's previous works, the transition from physical to virtual space is very subtle, and the virtual environments she creates, often evoke an immersive meditative feel. The virtual garden is inhabited by anthropomorphic and abstract agents or bots. The subtle changes in virtual scenery, as well as in the behavior of the bots, are derived from movements of robots in the physical garden. They appear to be contemplating the nature of existence and meaning of life through randomly generated lines from Lao Tzu's Tao Te Ching. The lines, however, are not merely copied from Tao Te Ching. Instead, the software generating them uses a Markov Chain algorithm and draws words and their semantic combinations from different places in the book, thus creating completely new sentences of Tao Te Ching wisdom. Some may seem incoherent, although all can be read as koans (riddles, questions or statements used in Zen Buddhism to provoke enlightenment) generated in such a way as to stimulate our cyborgian minds or to be read and interpreted by posthuman artificial agents.

The installations of the *MetaGarden* project guide us through philosophy and technology of life enhancement endeavors. As humankind, we have always strived to go "beyond" ourselves, to perfect ourselves through different means. In today's technologically dominated world, we build intimate relationships with our machines and put our trust in technology to mediate and even govern every aspect of our daily life. If, for example, we look at the way we use smartphones and to what extent we are attached to them, we can consider them our artificial limbs, but also as our external memory. We are becoming one with our machines as the boundaries between biological and artificial are increasingly blurred with scientific and technological advancements. Parallel to human augmentation is the creation of artificial life and anthropomorphization of non-living objects, including automata, toys, robots, and virtual avatars. Evoking the dynamics of organic and inorganic, biological and artificial, carbon-based and silicon-based existence, *MetaGarden* is contemplation on life, its augmentation and preservation.

We are only at the threshold of this technological era, and yet the accelerating rate at which technologies develop and affect us is unprecedented, making it difficult to anticipate future impacts and consequences. We may aspire to human augmentation and life enhancement through technology, but at the same time, we have to keep in mind the capitalist profit interests underlying the development of these technologies, the question of who will have the access to them, as well as many other political, epistemological, and ethical concerns. However, being at the threshold and witnessing the pioneering projects of human augmentation is also an opportunity to take into account present and potential issues and to address them at the beginning of this technological paradigm shift. In doing so, we may set a path of wise use and potentially good prospects of technologically mediated wellbeing.

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