

MOLDING THE SIGNIFIER - CODESCULPTING THE POSSIBLE SHAPES OF A FUTURE CONSCIOUSNESS

Ivor 'ID' Diosi, SCART

Science/Creation/Art/Research/Technology Center, Prague,
13000, Czech Republic

E-mail: <ivor.diosi@gmail.com>

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Abstract

This article introduces the art/science/transmedia project 'molding the signifier' and maps out its wider cultural and societal connotations, reach and significance, with specific reference to its staging within the *Trust Me I'm An Artist* event (EU Creative Europe funded project), that took place in Prague in 2015. As the work itself strives to artistically bridge and synthesise recent, in the opinion of the authoring artist group, existentially highly relevant results in science – so the article provides an overview and synthesis of their art/science fusion approach and methods.

Keywords: AI Artificial Insanity, Uncanny Valley, Glossolalia, virtual humans, machine perception, quorum-sensing, emergence, consciousness, Cognitive Neuroscience, Neural Computation, Computational Linguistics

Introduction

'*molding the signifier*' is a collaborative work of _humane after people_. We are an art-science group, addressing questions of the future of the human condition, aiming for a machine-unreadable humanity, creating the future Humane Other.

Our works strive to be detached from socially conditioned perception and our simian legacy as much as possible, and focus on what really matters: the human being as autonomous conscience in the unvoid [1].

The key tenet and artistic method of _humane after people_ is to foresee questions and address them before they become universal and debated issues, by looking at current, state-of-the-art results in science, connecting the dots and extrapolating connections between different scientific fields, bridging seemingly disparate areas in research and highlighting the under-considered consequences of their cumulative and emergent influence upon the human condition.

With '*molding the signifier*', we are foremost posing the question: What exactly then IS a human in the light of current science and technology? We need a re-definition of intelligence, agency, and consciousness in ways that go way beyond the anthropomorphic.

'*molding the signifier*' is an interdisciplinary project at the intersections of art, cybernetics, ecology, linguistics and biology. It draws from a wide array of particular fields, including cognitive neuroscience, theories of consciousness, neural computation and computational linguistics, bacterial and cell research and the study of mental illness. It offers a discursive, confrontational and emotionally charged approach as to what constitutes (human) consciousness and how we perceive what is human from a perspective that is very sensitive to the problem of uncanny valley [2] - language.

Foundations

Research by the following scientist/institutions and their particular published papers were instrumental in preparing the ground for and conceiving '*molding the signifier*':

Christof Koch – On Neurobiology and the Mathematics of Consciousness [3].

The Blue Brain Project at EPFL, Geneva, Switzerland, whose overall goal is to build biologically detailed, supercomputer-based digital reconstructions and simulations of the hu-

man brain, that "offer a radically new approach for understanding the multilevel structure and function of the brain. The project's novel research strategy exploits interdependencies in the experimental data to obtain dense maps of the brain, without measuring every detail of its multiple levels of organization (molecules, cells, micro-circuits, brain regions, the whole brain). This strategy allows the project to build computer models of the brain at an unprecedented level of biological detail, providing a new tool to study the complex interactions within different levels of brain organization and to investigate the cross-level links leading from genes to cognition." [4].

A body of research on gut microbiota manipulating host behaviour, in particular by the Biosciences Institute, University College Cork, Ireland, which provides evidence of microbially produced molecules with neuroactive functions that can have influences across the brain-gut axis, modulate neural signalling within the enteric nervous system, and consequently signal brain function and behaviour [5][6].

A body of research on bacterial linguistic communication and social intelligence, in particular by the Sackler Faculty of Exact Sciences, Tel-Aviv University, Israel and the Center for Theoretical Biological Physics, University of California at San Diego, USA, which asserts that bacteria have developed intricate communication capabilities (e.g. quorum-sensing, chemotactic signaling and plasmid exchange) to cooperatively self-organize into highly structured colonies with elevated environmental adaptability, to collectively maintain linguistic communication: shared interpretations of chemical cues, exchange of chemical messages (semantic) and dialogues (pragmatic), meaning-based communication that permits colonial identity, intentional behavior, decision-making and the recognition and identification of other colonies – features we might begin to associate with a bacterial social intelligence [7].

Art/Science Concept

A large, and possibly major, volume of cells present in the human body do not have human DNA - we are a mere host, a topography, for billions of bacteria, archaea and fungi. Much as we're convinced that our brains run the show, all the while our microbiota alter our drives, desires, and behaviors to foster their own reproduction and evolution. The cited scientific research also shows that microorganisms communicate with each other in "different languages" and even have social intelligence.

'*molding the signifier*' draws from these state-of-the-art biochemical theories that describe the body as a functional conglomerate of myriads of previously autonomous biological agents. The body is understood as a complex ecosystem into itself, like a microcosmic galactical empire with vast holdings and expanses, with billions of different inhabitants, each interdependent and communicating, but also fighting for power and influence, with mind and consciousness rising as a consequent emergent phenomenon of this microcosmos.

An important observation is that body-mind-ecosystems occurring in nature have no clearly delineated boundaries, a fact which is very counter-intuitive to our everyday experience of our bodies being "whole" and separate from everything else.

Body-mind-ecosystems are in fact ripe with entry points, permeable membranes of every kind, from the physical to the psychological. They are constantly at war, fighting invasions of foreign agents – from virii to memes, conducting vastly complex exchanges of biochemical information, updating and adjusting their microcodes and along with them the emergent "global systems database" - the mind and the consciousness.

And sometimes an invasion fully succeeds, and the foreign virality ends up reprogramming the ecosystem to serve its own purposes.

The Works

'*molding the signifier*' is a time-based, hybrid, bio-cybernetic installation. It deploys an external biological agent to infiltrate and disrupt the body-mind-ecosystems of virtual humans, resulting in states that we, classic humans, can perceive as mental illness. A well known game character (TwinSouls from Unreal Tournament 3), has been chosen to be deconstructed as a virtual human actor, as this is how most people today are introduced to and come to know virtual entities. This is in effect intended as a social commentary on a culture that is hungry for simulated experiences, yet is stuck on its own evolutionary conditioning - the problem described as the "uncanny valley".

A biologic culture (an assortment of mold species) is continuously monitored and measured for data with a digital microscope and a set of bioelectric sensors. This real-time input is, as a symbol of biological contamination, gradually interspersed into the digital processes that govern virtual human visualizations/simulations, which include facial recognition, procedural emotion expression and speech synthesis. The whole work consists of I. a physical installation of the biological part and the sensors; II. simulation of brain activities on multiple levels, that are influenced by the biological; and III. a projection with the virtual human actor visualizations (the game characters), whose apparent manifested behavior is a result of the running simulations.

The complete circuit comprises a hybrid bio-cybernetic system - three virtual eco-entities invaded by a biological agent. The system evolves in time - at the beginning, the virtual humans have a reasonably high level of mimetic semblance to humans as we know them - they act as convincing conscious persons, engaging visitors in eye contact and speaking to them. Different emotions appear on the virtual visages, depending on the actual human faces in the room and the degree to which the facial recognition aligns with the emotions they project. This behavior is gradually disrupted by the growth of the mold(s), resulting in increasing levels of perceptual digital madness. The virtual humans' facial features start to twitch and contort with increasing intensity, and glossolalia (speaking in tongues) gradually phases out comprehensible speech.

The libretto that has been chosen for the piece is a seminal text from linguistic theory, "Cours de Linguistique Generale" by Ferdinand de Saussure. *humane after people* are of the opinion that this very text was at the beginning of a more than century old and ongoing quest that brought us, through its cascading influence through structuralist, post-structuralist and post-modernist philosophies, the current post- and trans-humanist, post-anthropocene discourse, that is also the running undercurrent for most all art/science endeavours.

On another hand, profound societal changes brought about by advances in science and technology do not happen by intentional design or a singular grandiose ethical choice. New forms of hybrid bio-cyber-AI life forms (including human cyborgs and mutants) will appear as the emergent results of myriads of technological advancements, steered by the pressures of the global markets and policies. These new forms of existence will possess new forms of consciousness and a relationship with existence, that will also be the emergent property of the myriads of building blocks that will be forming them. Developing an appreciation of the enormous complexity and intricacy of



Fig. 1. Close up of the molds, *Molding the Signifier*, Ivor Diosi. (© by the artist.)

this process, and of the forces that drive it, is, in my opinion, the most prominent ethical challenge facing humanity. Extolling and disseminating this message was what we primarily intended by participating in the *Trust Me I'm An Artist* project in 2015, and what I, representing the group efforts, have brought to the table for the debate with the ethical committee. The artificial entities currently living amongst us, in all our gadgets and control systems, are a signifier for what's about to come - and we need new paradigms in understanding ourselves to keep up.

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References and Notes

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