

Beyond Life Cycles

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Abstract

Human activities in outer space are producing increasing quantities of space “debris”. This well-known fact posits the question about the value and use of space technologies after their operation period has expired. Rather than calling these non-functional objects “debris”, we propose to treat them as “end-of-life allopoietic systems” with the potential of becoming autopoietic systems. In general, our utilitarian, anthropocentric, and control-oriented management of processes discourages research into emancipated, unfamiliar entities which do not (yet) appear in our ecosystems. However, outer space technology with its literal and symbolic remoteness presents an opportunity to transform utilitarian objects at their end-of-life into emancipated non-utilitarian living or life-like systems without the danger of interaction with the existing living systems of our planet. Here we outline a composite approach to the challenge.

Composite Methodologies for Outer Space

From the beginnings of Modern age, artistic and scientific communities have been epistemologically strictly divided, each following their own methods and protocols, but concerning themselves with similar issues and topics. Recently, however, composite protocols stemming from the intersection between art and science have been emerging. These composite protocols are relevant to both spheres, but deal with issues unsolvable using methodologies of either sphere separately. It is crucial to search for new knowledge that has references in basic, natural, and applied sciences as well as in art and humanities. To achieve this, we must overcome the persistent modes and patterns of the dualist thinking inherited from Cartesianism as well as abandon the traditional conception that art deals primarily with the aesthetic and beautiful, and that it produces nice, contemplative forms that are made to please our eyes and soul. Such views on art derive from a certain age, i.e. from the 18th and the 19th century when such conception of art flourished, and when the divide between art and science has reached its peak as well. Today, it is time to embark towards a new paradigm of knowledge.

The constructivistic approach we would like to employ here is based on inter-subjectivity instead of the classical objectivity, and on viability instead of reaching one objective truth. It implies that the combination of both scientific fact and artistic/cultural manifestation leads to an abstraction, which can be projected into our cognitive reality. This abstraction of art and science in action is called the composite

projection. The composite projection works as an iteration of the process of extrapolating what we know of reality to what we think reality *should* be, then reconsidering the initial projection with new facts and developments, leading to a modified projection etc. The result therefore has multiple sequential manifestations within the realm of the possible, probable, speculative and fictional. Composite protocols thus stem from both artistic and scientific methodologies, but they are not necessarily consistent with one or the other. They facilitate a holistic understanding of particular topics that are the subject of both science and art practices. The knowledge is generated within the actual/real and conceptual/belief.

In the context of the empirically positivistic conception of science, which operates with the empirically proven, deductive truths, the application of these is guided by necessity, utility and efficiency. The result of such knowledge is therefore an applied solution within the bounds of the possible and measurable. The context of science prohibits the suspension of the possible to construct the impossible, i.e. to produce speculative narratives, fiction and fantasy (as Francis Bacon condemned the philosophy of the speculative as a harmful detour away from the truth). In this sense, speculation (when not understood as extrapolation) and fiction can be conceived as a conscious denial of fact and the reasonable, a state of belief in an idea not embedded in reality, or as a product of the anti-rational. Even so, the futuristic narratives should rely on a consensus of the possible.

Contemporary philosopher Eugene Thacker observes that there have only ever been three approaches to thinking about life: SOUL, MEAT, and PATTERN (Thacker, 2005). Within this trinity everything is deemed to be animate, living, and vital. In the time of networks, swarms, and multitudes of genetic and information technologies, the PATTERN pervades systems of all kinds and it seems to be dominant today. Despite this observation, can we rid ourselves of this trinity and dare to invent some other approach to thinking about life? The existence of our progenies beyond the edges of our heliosphere, in the absolute absence of the human and his/her effects, certainly seeks to broaden the scope of these concepts. What life is in this realm might not fit into Thacker’s trinity of soul, meat and pattern.

Post-terrestrial Life

From its very beginning, technology has proceeded with the promise of providing us with greater control. Modernity (Modern age) promised control over nature through science

and material abundance through technology. At this point we can find the opportunity to think beyond the confines of control and surveillance, beyond the dualities of utilitarian and non-utilitarian, cause and effect, soul and meat, pattern and random, live and dead, etc. The feedback we can get from technological products that abandon the dualities of our terra-thinking, which in fact owes a lot to Cartesian conceptions, is entirely unpredictable.

The “end-of-life” space objects are terrestrial materializations of human thought having potential to become the emancipated, functional units, capable of cognition and, consequently, of identity. Terrestrial sensory probes at the edges of our solar system, the farthest-reaching manifestations of humanity, were designed to fulfill strictly scientific purposes. However, the ultimate fate of these objects, beyond relentlessly serving humanity with data, had not been determined at their launch. The remoteness and the ebbing life of these extensions of the human species are gradually turning the augmentations into independent objects.

Our challenge is to nurture the teleology of space probes beyond their initial purpose. We aim to explore possible modifications of existing and future space probes to turn allopoietic instruments into resilient, self-repairing, robust, autonomous, energy efficient, adaptable systems, all of which are properties current technology lacks, but living systems possess.

The Authentic Environment

To create artificial life on Earth is a proof-of-principle; proof that we understand living systems to the extent we are able to recreate them. This positivistic approach, however, does answer the question *why* one should attempt to do so, since life has been ubiquitous and resourceful through both space and time in terrestrial environments. Outer space is in fact the authentic environment of artificial life, because life (as far as we know) has not been able to colonize it on its own.

We begin to apply the current knowledge of resilient self-organizing systems to the construction of the next generation of space probes. Unlike scientists, who would equip the next probes with ever better and more complex systems designed to carry out scientific experiments, we foresee the addition of a simple entity, which can withstand the conditions in outer space, but also with the ability to adapt, if it encounters environmental changes; made up of a self-repairable matrix, coined from autonomous technology and simple living (or life-like) systems; working in a symbiosis to absorb entropy and fight decay.

Emancipated Space Technologies

Distance is a tool of scientific and artistic contemplation. Creating progeny that is foreign and non-utilitarian in every respect has great philosophical value as it presents us with a (bio)technological version of the “overview effect”. The alienation induced by this other has the potential to transform the familiar and recalibrate the human condition, urging us to revise the dominant but often exclusionary humanist values.

Humankind, in awe of scientific knowledge, humanistic understanding and artistic possibilities, can produce an

unthinkable civilizational value. Enabling autonomous processes out of our reach is a civilizational step that can lead to a better understanding not only of what we know but also what we don't.

References

Thacker, E. (2005). Biophilosophy for the 21st Century, 1000 Days of Theory. <http://www.ctheory.net/articles.aspx?id=472>, accessed 10.5.2013