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Cosmologies of life after Peirce, Heidegger and Darwin

Abstract: My paper proposes a tentative framework of bio-existential semiotics based on a reading of Peirce, Tarasti, Darwin, Heidegger, and others. According to this view, there is an evolutionary continuum to life. Human beings are natural organisms and they exhibit many similar bio-existential phenomena. Natural evolution also produces the anthropological, societal and global semiotic processes that constitute cultural evolution as an outgrowth. In the bio-existential perspective, the world is composed of imperfect systems and imperfect consciousnesses where every lifeform must struggle for its existence. Every “*Dasein*” must face the fact that it must die because it cannot comprehend or control the universe in its totality. This is why life and existence are “tragic” phenomena. Every bio-existential *Dasein* is a partial comprehension of the universe, and the only way the universe can comprehend itself is through these partial perspectives, which are born to imperfection and die in imperfection, but whose imperfection is of the essence of the universe. This is why bio-existentialism makes for a “tragic” perspective: we are mortals, and all mortals must die. Nonetheless, there is also hope and optimism in this view of life. In conceiving of existence as having certain universal principles that extend from biology to sociology, semioticians and philosophers can formulate new ways of looking at the world. Together with scientists and artists, they can hopefully work towards a better – or at least more refined – ethical attitude towards science, nature and society.

Keywords: Darwin, Peirce, Heidegger, biosemiotics, existentialism

1 Introduction

In our efforts to extricate meaningful guidelines and hints for *future* projects from semioticians, philosophers and scientists of the *past* – itself an anachronistic and faltering undertaking – we have come to intercourse with the most varied crowd of brilliant minds; from Darwin to Heidegger, from Lotman to Peirce, from Tarasti to Uexküll. In trying to synthesize traditions that never go beyond their spectrum of expected outcomes, one gains the position of a detached observer whose eye for synergy and isomorphic connectivity allows for the flourishing, however perverse and unorthodox, of seemingly separate (in time and space and semiotic

scope) intellectual endeavours. Each passion, each vision of the world, inherited from such and such a tradition, is itself a source of great power and hope for the future, because each unique tradition *believes* in itself and in its own tomorrow. So, in their synthesis, one is bringing together “hopeful” practices and synergizing their energies into a common goal, a common vision and a common (semiotic-scientific) practice. This synthesis is the function of thinking; thought, under the guidance of Reason, does not believe in the incommensurability of ideas and practices.

Darwin for me is a revolutionary thinker whose principles, as much as his empirical data, *still* possess untapped potential for semiotic research. He brought light to darkness, but he also handed over the candle, the light-source, to his successors. The continuum represented by the Darwinist school, or rather the *Darwin – Mendel – Crick & Watson* lineage, contributed to the opening of the fields of evolutionary biology, ethology, genetics and biomolecular research. The “philosophical” field of *theoretical* studies of life, unfortunately, has not moved much beyond its roots in the mid-19th century, in Darwin and the neo-Darwinists. Today, such philosophical amateurs as Richard Dawkins (who nonetheless is a meritorious scientist) dominate the field. It is a sorry situation indeed. Semioticians, such as the researchers in biosemiotics (comprising zoo-, myco- and phytosemiotics) can lead the way, among others, to a rehabilitation of the theoretical questioning of *naturalist deep history*. But I don’t think they can do it alone. This is where I bring in existential theories. Compared to natural organisms studied by natural science, semiotics studies both natural and non-natural quasi-organistic structures, structures whose consistency is marked by their cunning resilience to outside pressures and their adaptability in the face thereof. Heidegger’s model of *Dasein*, itself a somewhat anthropic (not to say anthropological) and thus biotic theory of existentialist epistemology, is interpreted for the purposes of (re-)thinking biology, (re-)thinking life, (re-)thinking man and (re-)thinking society.

Peirce’s contributions to my theory come from his evolutionary cosmology, triadic ontology and his pragmatic conception of science; he believes in science because *it works*. Even his mystical bent on spirituality is for me more than a curiosity. I believe that the best way to tackle Cartesian dualisms – tackle them as I do – is to re-approach materialism from a different, perhaps more vivid and sensitive angle, where natural science and existential philosophy are the starting point for a new theory of life. Peirce, Heidegger and Darwin are not, in the end, the strangest bedfellows they may first appear. Semiotic research should, after all, utilize the widest possible source material to reach the most relevant conclusions.

2 The many faces of Peirce: Scientist, Pragmatist, Semiotician

Peirce, for me, represents a *modest* megalomaniac. His obsessions, real and persistent, fuelled a heart and a mind capable of stretching into different directions for different occasions. Despite his philosophical, semiotic and mathematical writings, he never lost sight of Science as lived *praxis*, as an experiential field open to the inquisitive mind. He never drew a wall between philosophy and science; he was never a positivist. He did not attack either one, even if he disavowed many of the established stupidities and dogmas in each tradition. This I call *the many faces of Peirce*: the way he tackled “the opposite poles of inquiry” (i.e. Science and Metaphysics) to quote Brent’s (1993: 18) apt characterization of Peirce’s broad, and deep, scope of interest.

Science is never far from philosophy, neither of which, again, is far from semiotics. Scientific fields and (history-founding) projects are established by acts of semiotic creation; there are a few of such moments in history when Science undertakes the project of social transformation on an unheard of scale: Bacon, Newton, Darwin and perhaps Freud and Marx. Yet the scope of practices in the modern sciences, despite their richness, is dominated by an attitude of philosophical rigidity and unquestioned dogma, a situation in which “normal science” (to use Kuhn’s terminology) follows the paradigmatic road paved by the Great Thinkers in whose shadow the individual scientists find themselves, happily and purposefully. What we can take from Peirce, and what my paper tries to propose, is that science should *never* – and in fact never could – operate “on its own devices,” *except*, indeed, if one takes these devices to mean the whole human enterprise of thinking, acting, intuiting, interpreting, model-building, philosophizing and legitimizing. To use Peirce’s categories, the firstness and secondness relations of science are founded on its metaphysics (or “logic”) of thirdness, and consequently there are no scientific “findings” that are value-neutral or devoid of metaphysical baggage, societal pressures, individual quirks, philosophical prejudices and so on. The solution, to follow Peirce, is a re-integration of aesthetics into ethics and the constant re-imagining of the very *ground* of thinking via new models, theories and world-views. In the end, an existential regard for the nothingness (non-conceptual everythingness) underlying all reality can serve as the starting point for a study of the plurality of the world’s riches.

So, semiosis is never-ending – but it must *start* somewhere. As Peirce says in *The Fixation of Belief* (1877: no page number available), “the settlement of opinion is the sole object of inquiry.” This kind of idea of competing opinions and ideas (including, incidentally, different models and concepts) is also my starting point

in science and theory. There is no privilege given to a particular approach, only to the practices and results obtained thereby for a particular purpose. Perhaps in this regard I am closer to someone like Rorty, except that I do not share Rorty's rejection of Science as a model (if only *one* model) for philosophical thinking. Here I am closer to Peirce, whose scientific background never left him. So, Peirce's own architectonic project is justified by a need to integrate different levels of analysis (semiosis). This is how modern science, too, should operate – integrating different levels of analysis while retaining the conception of science as a never-ending project.

Peirce's own work, and theories, always followed a triadic model. So, perhaps we could divide his different *personae*, different *alter egos*, into three groups (as long as these are seen as mutually enforcing rather than contradictory or conflicting): 1) The Scientist-Empiricist, 2) The Pragmatist-Theorist and 3) The Mystic-Semiotician. This is a scale from rationalism to irrationalism, or from the particular to the general (but is this a Hegelian ascent of the alienated Subject to the Absolute?). Of course, most people see him as a sum of these parts, and rightly so. But does the middle-of-the-road “consensus-Peirce” represent all that can be said about him? I would emphasize the third level (of the three categories above) for the purposes of my analysis, and see his evolutionary and scientific theories as *stemming* from his deep sense of the spiritual and the cosmic. His semiotic model, indeed, was fundamentally that of the cosmos and its evolution. So, we should place his tychism, synechism, agapism and other grand-scale theories *at the heart* of his intuitive world-view which, while never fully articulated in any consistent way, nonetheless represents perhaps the most philosophical (or at any rate the most “existentialist”) of his theories of life. From this wellspring I drink to nourish my thirst for a bio-existential framework of semiotics. Peirce did not know Heidegger, but he certainly knew Darwin and he certainly saw his work in that same historical project. The existential framework will be explored in the next and final chapter, but I will summarize my analysis of Peirce's “many faces” by the following semiotic graph (Figure 1), where I have tried to show that a love-based “diachronic determinism” is at the heart of his concept of evolution, world history and emergent semiosis.

Now, what the graph also shows is that Peirce's many “pulls” meant that it is quite possible to read him as a diachronic determinist or even as a synchronic relativist (though read the caveat at the bottom of the graph Figure 1), but that ultimately his different “faces” were working towards a common synthesis, as explored in his evolutionary conception of life and knowledge.

In the chapter to come, I will turn away from Peirce, towards other theories of evolution, man and biology – namely existentialism and biosemiotics – and argue for a cosmological theory that accounts for isomorphisms, analogies

PEIRCE in ideal-archetypal categories

	RELATIVISM	DETERMINISM
SYNCHRONIC	<ul style="list-style-type: none"> – (N/A?)* – Tychism – Firstness (Chance) – Peirce-the-Skeptic 	<ul style="list-style-type: none"> – Common Sense – Customs and Habits – Secondness (Causation) – Peirce-the-Scientist
DIACHRONIC	<ul style="list-style-type: none"> – Fallibilism – Tychism – The Scientific Method – Peirce-the-Pragmatist 	<ul style="list-style-type: none"> – Synechism – Agapism – Evolution & Perfectibility – Thirdness (Synthesis) – Peirce-the-Mystic

* Peirce as a synchronic relativist is a problematic concept, and it is included here mainly as a theoretical category - much like Kant's contradiction-in-terms "analytical a posteriori". Also, in this analogy, the category of diachronic determinism is something like my "synthetic a priori", since it is my love child.

Figure 1: Peirce in ideal-archetypal categories.

and similarities between different *kinds*, and different *levels*, of semiosis by providing a hypothetical new intermediary model based on the mathematical structure of the *circle*; a kind of universal model for *any* bio-existential system of semiosis, at least in conception. It is useful for the very large and the very small (and the medium-scale) without shunning the existing body of scientific knowledge. I will attack rigid conceptions of science, only to reaffirm its radical power to present a unified vision of interlocking semiotic systems; cf. D.Bohm's *Wholeness and the Implicate Order* (1980) for one controversial paradigm to look out for. It is indeed the point of the theoretician and semiotician to sketch hypothetical meta-theories for scientific practice, and to propose new avenues of research. Many of the debates and deadlocks reached by scientific debate are the result of philosophical naiveté or, worse, ethical and aesthetic blindness. Solving these problems requires solving ethical and aesthetic problems as well as grounding them in a holistic ontological theory of existence, or at least explaining the blindnesses that arise when one such theory is allowed to dominate the field (e.g. the current mixture of *neo-Darwinian neo-Newtonian neo-Cartesian neo-Hobbesian* materialism). And since semioticians are experts at studying relations, structures and connections, they may contribute to such a discussion (see my article "Studying the Cognitive States of Animals" [Lehto 2009]) Next, I propose some new avenues for thought with Peirce's invaluable help.

3 A bio-existential framework of semiosis

Let us start with Eero Tarasti's approach, in his book *Existential Semiotics* (2000). He proposes a radical difference between classical (traditional) semiotics and existential (new) semiotics. Old semiotics he identifies with the structuralist and binary approach – here he is thinking about Saussure, Greimas etc. – whose basic metaphor, and basic graph-structure, is the *square*; compare for example Greimas' semiotic squares. As for the “new,” existential semiotics, its basic metaphor, and graph-structure, is the *circle*. I would like to accommodate this theory into a historical perspective by qualifying its reading of classical semiotics with a caveat. Namely, despite the factual and accurate depiction of the binary-structuralist (anti-existentialist) current in semiotics, especially its post-Saussurean and post-Jakobsonian linguistic applications, we can *also* find examples of the circle as a basic metaphor for the semiotic reality. So, we have Peirce, in *Evolutionary Love* (1893: no page numbers available): “The movement of love is circular.” Love, equated with an evolutionary principle of order or, to quote from the same page (Peirce 1893), “harmony,” is a fundamental semiotic principle indeed. Situated within the core of Peirce's evolutionary view of the cosmos – agapism together with tychism and synechism – it represents one opening of the historical and existential dimension of semiotics. Semiotics, as a world-view, conceives of *realms of semiosis* – such realms can be anthropic, societal, ideological, and, yes, biotic all the way to cosmological. So, too, Jakob von Üexküll, whose basic life-structural framework (with its Innenwelt/Umwelt metabolic “loop”) is essentially “rounded on the edges” and circular; we can no longer talk about clearly confined structural spaces (with concrete or metaphoric “walls”) and clearly unfolding time-scales (synchronized to Big Ben or to Greenwich Mean Time) but rather we must talk about the becoming-space and becoming-time of consciousness – here equated with life's self-engendering existential structure (an animal's being-in-the-world as a sentient organism). Darwin, already, situated the struggling organism in a kind of feedback-relationship with the environment. For Darwin, variation is the key to evolution, and variation is in *constant flux*. Patterns, namely species and higher levels of order, appear as states of *co-habitation with*, and *in-habitation in*, a natural system. Now, I would argue that biology has always been much more than simply taxonomy and pattern recognition, it is a theory of the interconnection of all life on earth. We don't even need a highly-advanced theory to observe the cyclical nature of natural processes of birth, life and death – whether on an individual scale of an organism's ontogeny, or on the wider scale of seasons, ecologies and biospheres. Nature, we may hypothesize, is a self-evolving bio-existential quasi-organism of interlocking and hierarchically nested circles (*Daseins*), which all interact and co-evolve on the level of Gaia to a gigantic, self-regulating

circle, the so-called “circle of life.” Beyond the biosphere, this circular framework extends to the circular rotation of the planets and atoms, and the physical processes that underlie gravity and electromagnetism seem to affect the evolution of organisms, as well, and make them “gravitate” or “magnetize” towards the centre of a “circular” mass (more on this later).

What, then, is the connection between Peirce’s agapism and the Hobbesian-Spencerian (I hesitate to say Darwinian) concept of nature-as-war/struggle? As a bio-existentialist, this question is the choice between an aesthetics of war and an aesthetics of love and peace. Firstly, because my existentialism owes a debt to Nietzsche, Heidegger and (to a lesser extent) Sartre, I will gladly admit my adherence to a kind of doctrine of life 1) as *Will*, usually rendered as Will-to-Power or Will-to-Survival, and 2) as *Angst*, understood as a kind of sense of urgency of one’s own existential condition as a finite, eventually-to-be-dead organism. This view of life is surely *tragic*, in the sense of Nietzsche and Camus, but also – and for the same reason – Dionysian; life establishes itself *despite* opposition and struggle – and establishes itself firmly and soundly at that, in a kind of orgy of self-founding self-expression: “I AM”, says the “I” of the self-opening Being, homologous to the way the god of the Hebrew Holy Book announces himself/himself to the world. This act, this *first* act, this initiatory stage of “I-hood”, is the birth of semiosis itself, of life itself. Life is the self-revelatory opening of semiotic process of “worlding”, of being-there, through the individual animals and their capacity for understanding and modelling the world, i.e. making the world *real* and *rational*, in the Hegelian sense. The tragic-Dionysian “I AM” is the universal call of self-recognition, and every animal, plant, human being and other subject is a stage, an experiment, in the unfolding of the absolute self-reflectivity of the Spirit. *The Spirit is Reality perceiving itself (Subject) as Matter (Objective)*, through the alienation of one *Dasein* from the cosmic totality. Consequently, cosmos is full of bio-existential self-enclosed systems of consciousness, all with their particular *Daseins*, i.e. ways of being-(in-)the-world.

I would like to stay away from an orthodox humanist existentialist perspective. Instead, I would like to emphasize life as an existential project, and so cannot privilege humans over other agents. I am interested in the biosphere as a whole, and not only the human world. We can study this world (of humans and non-humans) in various ways. There are many ways of mapping and modelling life processes. Of these, I should mention mathematics (including cybernetics, chaos and fractal theory, algebraic logic), psychology (emergent connectivism, cognitive ethology, sociobiology, evolutionary neurochemistry) and, of course, semiotics (Uexküll’s Umwelt-theory, Peircean cosmology, Kalevi Kull’s communication studies, Dario Martinelli’s zoomusicology and my own bio-existential and epistemological theories).

To “prefer” one theory over another means, simply, to have some usefulness for such a theory, as James and Peirce tell us. And sometimes only one theory will have particular usefulness. Sometimes only one theory will lead us to a particular truth. That is why a good combination is better than a single paradigm in isolation. In this particular paradigm, I combine Heidegger and Darwin, as well as Lotman and Peirce, to marry existentialism and biology (hopefully in an interesting and fruitful way). But I acknowledge my limitations. We are all working within different traditions with their own ways of looking at the world.

The background been laid down, what exactly is the main contribution of such a theory, which so far has been shown to be a Darwinian re-invention of the semiotic tradition stretching back to Peirce, Lotman and Sebeok and utilizing the more recent theories of Tarasti and a broad ecological, Darwinian consciousness? Where, if anywhere, does a *Dasein*-analysis of existential structures of life and the universe lead the scientist or the semiotician? I have stated already my view of life as both *tragic* and *dionysian*; namely evolutionarily determined and simultaneously free and chaotic (here I’m following Peirce, who was an evolutionary determinist moderated by a belief in “tychism” i.e. chance and chaos). We need to read Darwin’s *Origin of Species* as a story, not about the *taxonomy* of species, but about *the origin of life in the variation leading to speciation*. Life is both materialistically determined and (semiotically) open-ended. This translates, somewhat facetiously: life is *real (fixed) but playful (unpredictable)*. To say that genes (“nature”) programme or pre-determine life and mental states is correct but only in a limited sense. It is also analogously true that pheromones and neural firings “cause” Love – but anyone who claims this is (rightfully) condemned as a lunatic. It would be sheer *reductio ad absurdum* because material and mental structures cannot *cause* each other: they are two explanatory models of the same phenomena from a different perspective. The Umwelt (objective world) is a reflection of the Innenwelt (subjective world), and vice versa. Consequently, life cannot be either/or; it has to be composed of both dimensions. Life is both material and spiritual, using these folk terms (and much of philosophy is using folk terms in an interesting new way). The philosophical error of Descartes and the early Modernists was to reduce the natural world into an objective, materialist machinery, *and* to simultaneously exalt human being’s dualistic nature as a composite of two essences or substances, Mind and Body. Of course, the idea of Man as “thinking” or “rational” animal goes back to Athens – and actually to many cultural origins, including Jerusalem and Rome. The Christian legacy has made this line of thinking particularly appealing to philosophers. But the problem is that it fails to capture the fact that *all* reality and *all* nature is dual in this sense: every organism is composed of an inside and an outside, a subjective world and an objective world, the perceiver and the perceived. Even an anthill has this structure.

However, to reintegrate the material and the mental into a single unitary phenomenology is possible, I believe, through a careful reading of Peirce (semiosis and evolutionary cosmology), Heidegger (*Dasein* and the destruction of Western metaphysics), Kant (the critical constructivism of epistemological idealism), Hegel (the analysis of subjectivity, alienation and the process of returning to the objective absolute), Nietzsche (the tragic view of – human and animal – life) and Darwin *via* Uexküll (the unity of neo-Kantian constructivism and natural evolutionary determinism). The need for this integration is clear; we may only think of the plundering of natural resources, the destruction of world's ecosystems, the pollution of the environment, global climate change, crammed mass production and the slaughter of farm animals, as well as countless other “philosophical errors” translatable into “societal” and “actual” errors that have resulted from the mistaken view that only humans are conscious beings. So, in conceiving of life and existence as having certain universal principles, together with certain amount of openness, we can come to formulate principles of aesthetics, ethics and cosmic ontology.

This would amount to a paradigm shift, and I don't propose to provide anything like that here. It seems a number of different factors and agents are preparing the way for this paradigm shift, as the necessary result of centuries of oppression and sleep under the domination of Western (Platonic-Christian) metaphysics, whose self-deconstruction is happening every day as the world is changing in interesting ways due to global integration and new scientific, philosophical and artistic visions that are deluging the West and the rest of the world.

The nature of this new paradigm is rather unclear. It could come about spontaneously as a result of new discoveries. Or it could come about as the result of rediscovering old theories (a new “renaissance”). Of course, there could be numerous competing paradigms: whichever paradigm or research method or “truth” wins does not depend on fantasy or our private wishes, but on the practical demands of scientific practice and the concrete problems set by our life worlds. In our modest way, semioticians and philosophers can formulate new ways of looking at the world. Together with scientists and artists, in developing models that break free from the subject-object dualisms and other old *clichés* we can hopefully work towards a better – or at least more refined – ethical attitude towards science, nature and society.

I propose that the prevalent malaise of technological and humanist origins can be traced back to a lack of interpretation of *cosmic* semiotic systems. *Cosmic* → *Biological* → *Existential*, three levels of analysis, should be separated no longer, but integrated to a new theory.

Let us turn back to our theory, then.

There is an evolutionary continuum to life. Natural evolution, turning into *cultural* evolution, also produces the anthropological, societal and global semiotic

spheres. These have been analyzed by structuralists like Lévi-Strauss and the Russian formalists. Semiotic systems, as Tarasti says, are like a *Dasein* (“Being-There”), in which existential self-hood is manifest, as the Hegelian “for-itself” of the system. Uexküll uses the term “Ich-Ton” for that which reverberates the internal dynamism of an organism. This dynamism is not the “essence” of that existential sign system but rather the *modality* of its existence, i.e. the way an organism structures the world around it by means of (available) signs. *Dasein*, the Innenwelt-Umwelt loop, Existence, Semiosphere. . . All these are relative synonyms. Tarasti, I believe, largely takes *Dasein* to describe *human* reality (cf. Kierkegaard, Jaspers and Sartre). For me, however, *Dasein*-analysis can accurately describe an anthill as well as a human being, a science project, a tribal community, the metabolism of the body or, for example, the structuring of world by the philosopher in his self-exploratory meditations. Now, to provide my modest contribution to the new non-dualistic bioexistential paradigm (against humanistic subject-object metaphysics and anthropocentrism), I will hereby present a diagram (Figure 2) that depicts my proposal for a model of bio-existential semiosis grounded on space-time phenomenological reality. It combines the Innenwelt-Umwelt structures of organic and cosmic life with the well-known *Dasein* models of Heidegger and Tarasti.

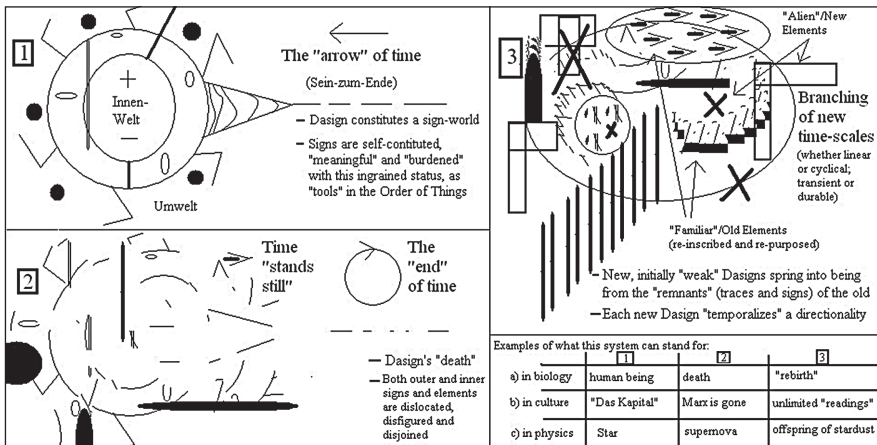


Figure 2: Bio-existential semiosis grounded on a space-time phenomenological reality.

Now, some comments on the graph above. (I have used the word “Dasign” for “*Dasein*” to individuate my theory, but those words are synonymous and should not confuse the reader.) The graph’s three-part structural process relates, consecutively, to the facts of (1) becoming-into-existence, i.e. life-as-becoming; (2) the

death and/or end of an existential sign system ; and, finally, (3) the after-effect, the “post-signifying reality” of *Dasein*’s existence (whether or not the *Dasein* is yet “dead”), namely the “after-life” of semiosis.

The process of self-becoming and self-manifesting of a sign-system always “takes time” and thus envelops a kind of temporality and directionality, i.e. the creation of a sense of history, mission, intentionality (Will), purposefulness (*telos*) and a “towards-something-ness.”: Heidegger analyzed Time in *Sein und Zeit* as the horizon of Being’s self-revealing. Time, as he famously put it is, is the horizon of Being. We could say that the “I-hood” of semiotic subjectivity opens up a (particular) world of signs as a means of manifesting one’s uniqueness through an act of self-expression (an existential thrown project in the practical world), and an *act* always takes time (and space) by definition, and creates a temporal existence for itself out of what already exists in itself. *Dasein* temporalizes itself by, in effect, creating a surrounding world (a niche) for itself, i.e. creating a meaningful environment in which it can exist. Of course, it may have already been *created* in this way by the world itself, but just “who” did the creating is not as important as the fact of its creation. We can say that, on the level of nature, it is nature itself which divisions itself off as separate organisms, just like on the level of reality it is reality itself which divides itself, creates itself, into separate (competing, conflicting, cooperating) “parts of reality.” World is self-creation and self-differentiation and the continual ascent (self-integration) back to unity with the Absolute. Every organism is an effort by the universe to comprehend itself, and it is the deepest drive of every organism to understand (model) the universe. Human are very good at this, but not perfect; and tape worms are very bad at this, but still capable of some kind of understanding, i.e. world-building.

Let us take a further look at the graph. In the lower right-hand corner I have sketched three (very much non-exhaustive) interpretations, practical applications, of this “*Dasein*’s journey” from birth (1) to death (2) and beyond (3). Firstly, and most obviously, there is the “existentialist-humanist” reading whereby we can conceive of our structure here as an anthropological tale of man’s becoming, dying and, lastly, his “after-life” (one’s “legacy” in the natural and societal memory). This corresponds to the humanistic and anthropological interpretation of *Dasein*. But a wolf would have a similar course; from the Schopenhauerian Will’s manifestation in the organism to its eventual death and post-mortem fate (i.e. state of being remembered and used, metaphorically speaking, by the world after its death – as food or seed, for example, for further generations of animals). A wolf has a bio-existential *Dasein* structured according to its *own* (non-human) Innenwelt-Umwelt structure and shaped by its own semiotic world. We could also substitute a plant here, and look at the ways a plant develops into existence out of nothingness by means of developmental blueprints and patterns that enable that

becoming-plant of a plant. . . We could look at how the same plant, or the aforementioned animal, will be the food and nutrition for some other species, or how its products will be productively used by other (opportunistic) life forms – like, for example, how animals breathe the oxygen exhaled by plants and micro-organism, thus constituting a positive after-life to a dying *Dasein*, and giving birth to new, other, alien *Daseins*. Every life form, and every *Dasein*, materializes (for itself) a reality that can be used (in itself) by others as well (for themselves). One’s subjective existence becomes objective existence for others. It is impossible to be “pure spirit” – every spirit has to become matter, to “incarnate” into the world, just as much as all matter has to become spiritual (through cosmic evolution). That is why all spirit must perish, and all organisms are mortal – they cannot signify the totality of the universe, only part of it. *If*, on the other hand, there were a spirit capable of sustaining itself and signifying the totality of the universe, it would be immortal, because it would signify everything to itself, and itself to everything else, but in the world of imperfect systems, imperfect consciousnesses and imperfect *Daseins*, every *Dasein* must *struggle* for its existence and face the fact that it must die: it must die because it cannot comprehend the universe in its totality, i.e. it cannot be pure spirit. No *Dasein*, by itself, is God. There is (likely) no God, because in order to exist, one has to be *Dasein*, i.e. an imperfect mortal being. *Dasein* is a *partial* comprehension of the universe, and the *only* way the universe can comprehend itself is through these partial perspectives, which are born to imperfection and die in imperfection, but whose imperfection is of the essence of the universe.

We are mortals, and *all* signifying totalities must perish. The mortality (partiality, imperfection) of parts is the only key to immortality (impartiality, perfection) of the totality. The universe cannot exist without renewing itself through self-alienation. Human beings, star systems and anthills are the necessary self-alienated substance of the universe transcending itself.

The path to universal totality is through cosmic evolution.

Well then, to get back to more mundane questions: why does my graph of the *Dasein*, with its Innenwelt/Umwelt-structure, resemble a *circle* (an amoeba) – and not a square or a triangle? I believe there are some suggestive mathematical (geometric) reasons for the ubiquity of circular structure in nature. A circle is *omni-directionally proportional*, i.e. its radius is the same to all directions, and it is thus capable of 360 degree turns without losing its inherent “preferential” orientation. A water-droplet, a planet, a cell, an atom, a galaxy, a plate and a crumb of bread all share that essential circular nature, because *nature prefers circles*; physical laws, like gravity and electro-magnetics, draw things into clumps and centerings, and this is the first stage of cosmological evolution. The circle is the geometric form of differentiation and self-formation. Every being has to

accumulate, and this accumulation gathers towards a centre, forming primordial “circles” of the universe (atoms, star systems, human beings). Not everything is circular, but many things are – surprisingly many, I would say. Natural evolution of life on planet Earth starts off, too, with microscopic circular structures because this (easily defensible structure) reflects the biotic centre’s need to defend itself as a separate entity, omni-directionally (against all possible enemies and forces), and to gather energies towards its centre. By eating and territorializing, an entity maintains its centripetal orientation and draws the boundaries of its own circle, i.e. its own being-in-the-world. This circle is not, of course, a bubble. Even a worm is a circle in this sense (it doesn’t have anything to do with the literal shape of a circle!), since it has fixed boundaries around its body. So, by “circle” I mean any self-centred, self-enclosed entity capable of defending its self, life and existential value, from societies to human beings to tapeworms and star systems. Without this capacity to concentrate and gather towards a centre, no *Dasein* could ever develop. All *Daseins* have the need to defend themselves in the struggle for existence of *Daseins*. Sometimes they fight for survival, sometimes they cooperate and find ways of co-existing, but always they have to protect their own interest, in order to survive. Now, of course many organisms and sign structures develop into interesting shapes and levels of complexity, forming networks and interrelationships that have higher orders of existence. Sometimes they already find themselves within such totalities to begin with. I have taken into this account, and I acknowledge the complexity of things, but one must remember that even a complex structure like a society or a city is roughly understandable, I think, as a *circular* structure of signs (that’s why we have “a city centre” and “orbital highways”, and “national borders”). Or, take a human: Its round body has limbs, two generally pointing downward while the upper two limbs are freer to interact on the horizontal plane with the world around us.

Now let us summarize our position: I have drawn a structure of a *Dasein* which constitutes a (meaningful) sign-world by its interactions with the Umwelt, as a function (a process) of that Umwelt – as one particular, actualized form of that Umwelt’s sum-total of potential actualisable field-effects, reflecting the range of organisms capable of surviving in a particular niche in certain conditions with certain levels of competition and cooperation. *Daseins* are existential gatherings of worldly energies into abiding structures that develop their own laws, metabolic systems and Innenwelts. Any such structure must have means of interacting with the world, either through the senses (always interpretative and proactive to some extent) or through limbs and external tools and signs. So, in biology, this model is largely applicable without exception. Also, it should be noted that such *Daseins* often form “colonies”, “communities”, “hierarchies” and other structures which enable the building of complex structures from relatively

simple, circular elements. But these elements, the building blocks of higher order *Daseins*, are themselves not insignificant or “dead”: For example, the cells in the human body or – to take a completely different example – the artistic sub-cultures of New Orleans or Helsinki are very much alive and full of vitality, yet their existence is linked to, and depended on, the existence of some “higher” levels of semiospheric structuring – in this example, “human body” and “city” respectively, to which they also contribute as members or internal organs. All life is in this sense dependent on different *niches*, *field effects* and (external as well as internal) *interactions*. Every *Dasein* opens up (“for-itself” a subjectivity) within a domain of already-existing *Dasein* (whose “for-itself” it uses as “in-itself” objective raw material, for example as food or slaves). Every *Dasein* envelops within a domain of possibility, as an out-growth of real “in-itself” stuff. Every child is born to living parents. But the child is not the parent, and there are infinite children to infinite parents. Bio-existential theory studies the essential and contingent features of these beings, together with the natural sciences, arts and philosophy.

Every bio-existential structure carves out its own (contingent) for-itself reality, its subjective domain, out of already-existing (necessary) in-itself reality, the so-called objective world (which is nothing other than the subjective world of others turned “dead” via phenomenological perception). Plants, cities, humans, ants, science and art, thus, create their own *Dasein(s)* by appropriating and objectivising other *Dasein(s)* for their own use, for their own bio-existential “world building” and “truth building.” Animals eat other animals, and human constructs eat other human constructs. Every *Dasein* wants (and must in order to survive) to differentiate from the primordial unity of the mother, and that is why reality is inherently tragic and Dionysian.

So, in analyzing “bio-existential” structures such as these, we may learn to overcome our reliance (old and tired) on a mechanical worldview *without throwing out the baby (Science, Reason) with the bathwater*, and maintain a perspective that is properly cosmic yet also properly grounded on local phenomena, i.e. on local occurrences of self-organizing selfhood. Peirce remains a major influence, a thinker whose schemes of a logical and cosmological order of semiological unity have proven fodder for future research, at least in my own case, into the relationship between the emerging frameworks of ecology with the semiotic tradition. In my opinion, by not relying on rigid, “square” models of research but instead advocating and developing “circular,” dynamic and rich systems-theories based on something like the models proposed here is the way forward. The point is not to have the final or best model but to keep the field open for a radical investigation into the possibilities of knowledge itself. The old “dyadic” models of the Cartesian mould should be supplanted by the “triadic” models of the Peircean-Heideggerian variety. Science should not be seen as a field devoid of (avoidable) ethical

consequences, because it *cannot* be (there is no separation of the ethical from the aesthetic and the ontological). Under the assumption of mistaken objectivity, its products and inventions are shaping and ravaging societies, human beings and ecosystems. Science, in order to be true to its name, must be open to hypotheses that can be tested. But it is important to *also* test theories that are not based on old metaphysical concepts, because the creation of new hypotheses drives science (and all other human practices) forward.

So, in order to be able to formulate new theories, new hypotheses, we need new ways of looking at the world (new directions and perspectives for study), including those which subject the self-certainty of our own *Dasein* into question. We need to analyze reality as the interlocking of competing *Daseins* for existence and survival which use methods of self-subjectification and other-objectification. Everything is real by definition. We need to see that reality is the phenomenological content of the objective semiotic process of being-able-to-perceive. Reality cannot be without the being-there of existence. Only existence is reality. Reality is the sum-total of all *Daseins*. Only then will the full reality of reality be discovered, because reality is the self-realization of its own fragmentary nature. Reality is self-separation of the primordial *Dasein* into competing existences, mutually vying for dominance. No single *Dasein* is the only (ultimate and final) *Dasein*, but every *Dasein* has a perspective on the world and a place in it. In order to break free from the spell of boring old metaphysics, we need to develop new theories that accommodate a holistic understanding of life and existence. Such a new view of life, societies, nature and other existentially organized semiotic structures will hopefully guide the way to a more *evolved*, more *ethical* and also more *aesthetically* happy conduct in the sciences and the humanities.

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