Mind-Matter-Evolution:

Cybernetics and Human Knowing. Vol. 19, nos. 1-2, pp. 95-120 Mind, Matter, and Evolution: An Outline of C. S. Peirce's Evolutionary Cosmogony Bent Sørensen, Torkild Thellefsen & Søren Brier

In the program article "The Architectures of Theories" (1893), C. S. Peirce presented his trichotomies within psychology, biology, physics and philosophy, and in terms of these trichotomies, it could easily be predicted, according to Peirce, what kind of metaphysics it would be appropriate to construct, a cosmogonic philosophy. But, other than presenting his very brief sketch of a thoroughgoing evolutionary cosmogony, Peirce, unfortunately, did not give this important topic further treatment in the article. The question which arises then is in what way these trichotomies can be said to be connected? Consequently, will an attempt to analyze a possible connection between the trichotomies shed light upon the evolutionary thinking of Peirce? In the following article we will give a tentative answer to this question. Keywords: C.S. Peirce, evolutionary cosmogony, metaphysics, pragmaticism

Introduction

The American polyhistor Charles S. Peirce (1839-1914)—inspired by Immanuel Kant (1724-1804)—worked out an architectural phenomenological philosophy where he through thorough analysis revised Kant's twelve categories to three that are more fundamental: **Firstness, Secondness and Thirdness**.

"In my studies of Kant's great *Critique*, which I almost knew by heart, I was very much struck by the fact that, although, according to his own account of the matter, his whole philosophy rests upon his 'functions of judgment,' or logical divisions of propositions, and upon the relation of his 'categories' to them, yet his examination of them is most hasty, superficial, trivial, and even trifling, while throughout his works, replete as they are with evidences of logical genius, there is manifest a most astounding ignorance of the traditional logic, even of the very *Summulæ Logicales*, the elementary schoolbook of the Plantagenet era. ... I was thus stimulated to **independent inquiry into the logical support of the fundamental concepts called categories**." (Comments on the article "On a New List of Categories," CP 1.560, c. 1907)

He called them cenophytagorean, partly inspired by the Pythagorean view of nature ordered by natural numbers. As his phenomenology in this way came to differ substantially from Georg W. F. Hegel's (1770-1831) as well as Edmund Husserl's (1859-1938), he called it a phaneroscopy.

"The cenopythagorean categories are doubtless another attempt to characterize what Hegel sought to characterize as his three stages of thought. They also correspond to the three categories of each of the four triads of Kant's table. But the fact that these different attempts were independent of one another (the resemblance of these Categories to Hegel's stages was not remarked for many years after the list had been under study, owing to my antipathy to Hegel) only goes to show that there really are three such elements." (A Letter to Lady Welby, CP 8.329, 1904)

One of the main problems Peirce's philosophy was **aiming at explaining was how humans** manage to get something meaningful and useful out of the manifold experiences originating in the irritation of their sensory organs. How did they come from the potentialities in Firstness, to the immediate empirical relational experiences of Secondness to interpret triadic regularities or habits in their—using Martin Heidegger's (1889-1976) term—*life world*, and to establish that as the truth of these cognitions?

Boe: Hier müsste mit den Begriffen "strukturelle Kopplung" und "Selbstreferenz" weiter reflektiert werden?

Peirce showed that **relations**, or **relational nets** involving more than three relates, can be broken down to triadic relations, and he tried to prove that triadic relations are fundamental in the way that they cannot be broken down to combinations of dyadic relations.

This is the reason that he came to be seen as especially fond of **classifying things into groups of three, of trichotomies, and of triadic relations**. Peirce wrote in "The List of Categories; A Second Essay" (c. 1894):

A thorough study of the **logic of relatives** confirms the conclusions which I had reached before going far in that study. It shows that logical terms are either monads, dyads, or polyads, and that these last do not introduce any radically different elements from those that are found in triads. I therefore divide all objects into monads, dyads, and triads; and the first step in the present inquiry is to ascertain what are the conceptions of the pure monad, free from all dyadic and triadic admixtures; (CP 1.293)

Thus, as **triadic relations** was considered to be foundational in his phaneroscopic metaphysics it is a thoroughgoing pattern in his metaphysical speculations, including a **cosmogony**, a theory regarding the order of the universe, its creation, origin and destiny.

Boe:- Wie kann die Differenztheorie mit der "Trichodomanie" von Peirce in Verbindung gebracht werden? (und der semeiotic philosophy) Mail Fuchs …ich kann Ihre Überlegungen gut nachvollziehen, vor allem, weil das Buch, an dem ich arbeite (DAS Sinnsystem - Prospekt einer allgemeinen Theorie), im Moment gerade diesen Problemkontext durchläuft. Im Zentrum steht der Ausdruck 'Trifferenz', dessen Konsequenzen ich noch nicht überschaue und den ich gerade durchprüfe an der Figur der Trinität (Dreifaltigkeit).

In the article "The Architecture of Theories," published as start of a series of five articles inaugurating a new mature level of the development of his **semeiotic philosophy** in the Monist (1891), Peirce clearly expressed what it meant to him to follow the Kantian maxim: "that systems ought to be constructed architectonically" (CP 6.09).

After having stressed the importance of the maxim, Peirce began describing **three theories** of evolution (concerning chance, growth, heredity, habit and effort, external forces and habit-breaking; or Darwinian, Lamarkian, and Kingian). Then he turned to psychology with its three categories or modes of experience: feeling, sense of reaction, and general concept. He then passed on to three geometries, or conceptions of space, and three models for the limits of time. Finally, he ended his exposition with a short presentation of his three basic logical categories: Firstness, Secondness and Thirdness.

This is precisely what following the Kantian maxim meant to Peirce, in terms of a few basic concepts to construct a philosophical system. The Cenopythagorean categories of Firstness, Secondness, and Thirdness are, according to Peirce, the most fundamental categories, and therefore they appear also within psychology, biology, physics and philosophy. Peirce wrote the following:

In psychology Feeling is First, Sense of reaction Second, General conception Third, or mediation. In biology, the idea of arbitrary sporting is First, heredity is Second, the process whereby the accidental characters become fixed is Third. Chance is First, Law is Second, the tendency to take habits is Third. Mind is First, Matter is Second, Evolution is Third. Such are the materials out of which chiefly a philosophical theory ought to be built, in order to represent the state of knowledge to which the nineteenth century has brought us. Without going into other important questions of philosophical architectonic, we can readily foresee what sort of a metaphysics would appropriately be constructed from those conceptions. Like some of the most ancient and some of the most recent speculations it would be a Cosmogonic Philosophy. (CP 6.32-33)

Peirce's Objective Idealism

Peirce's objective idealism holds a form of monism where "matter is effete mind," (CP 6.25) close to Aristotle's hylozoism. Thus, *hyle* as the combination of mind and matter makes these—in a Cartesian view two radically different kinds of substance—into one by viewing them as complementarily interconnected, much as in Yin Yang philosophy. For Peirce, the important question is what the relationship is between the types of lawfulness in the realm of mind and the realm of matter. In "The Architecture of Theories" (1882), he proceeded by asking in the following way:

the question arises whether **physical laws on the one hand and the psychical law on the other** are to be taken —

(a) as independent, a doctrine often called *monism*, but which I would name *neutralism*; or

(b) the psychical law as derived and special, the physical law alone as primordial, which is *materialism*; or, (c) the physical law as derived and special, the psychical law alone as primordial, which is *idealism*. (CP 6.24)

Peirce quickly dismissed neutralism, since this doctrine falls victim to the logical maxim known as Occam's razor by assuming more independent elements than is necessary, or in Peirce's own words: "by placing the inward and outward aspects of substance on a par... it seems to render both primordial" (CP 6.24). And if we remember Peirce's harsh critique of **determinism—which he saw as the most important conceptual presupposition for materialism**—it is obvious that he would not choose it.

Boe: **important conceptual presuppositions** Wie lerne ich "presuppositions" zu "beobachten" und zu "beschreiben"?

In "Man's Glassy Essence" (1892), Peirce tried to show how the amorphous substance which all living creatures consist of (e.g., the **protoplasm** of the cell has a mode of operation) **cannot be explained by aid of physical and chemical terms alone**. This becomes clear if the most complex processes of the protoplasm falls subject to investigation. Not only does **protoplasm show the ability to feel, it shows all the functions of the mind, and the problem is to find a suitable hypothesis to cover this**. Peirce wrote:

But what is to be said of the property of feeling? If consciousness belongs to all protoplasm, by what mechanical constitution is this to be accounted for?

The slime is nothing but a chemical compound. There is no inherent impossibility in its being formed synthetically in the laboratory, out of its chemical elements; and if it were so made, it would present all the characters of natural protoplasm. No doubt, then, it would feel. To hesitate to admit this would be puerile and ultra-puerile. By what element of the molecular arrangement, then, would that feeling be caused? This question cannot be evaded or pooh-poohed. Protoplasm certainly does feel; and unless we are to accept a weak dualism, the property must be shown to arise from some peculiarity of the mechanical system. Yet the attempt to deduce it from the three laws of mechanics, applied to never so ingenious a mechanical contrivance, would obviously be futile. It can never be explained, unless we admit that physical events are but degraded or undeveloped forms of psychical events. (CP 6. 264)

Hence, there is a property of feeling, and this property is inexplicable in materialism and mechanism; feeling is prior to habit formation, and only if it is accepted that matter is effete mind, a form of life which is stagnated in obdurate habits, an explanation can be put forth: there is a continuous contact between the mechanical laws and the mental laws; the mechanical laws are near the one end of the continuum and the mental laws are near the other, and the exactitude and regularity of the mechanical processes can be seen as being only differences in degree from the tendencies which regulate the mental acts.

In "The Law of Mind" (1891), Peirce made himself spokesman for the view that **feeling has a tendency to become spread out continuously, a tendency to affect certain other feelings**. During the spreading, the feeling loses its intensity and force, which means, the force to affect other ideas; however, **it gains in generality and enters into a network with other feelings** (see CP 6.104).

In connection to this, there is an inverse relation between the vitality of the feeling and the inertness of the habit, and since the vitality of the feeling is in a direct correlation with consciousness, it is clear why the grade of consciousness is higher in the kind of mind which is least hidebound with habits, and lower in the kind of mind which is most hidebound with habits (see Murphey, 1993, p. 346). Put in another way, when determination and uniformity are dominant features, the mind almost disappears, and when these are less dominant, mind spreads itself and increases ist influence and causes new forms of determinacy and uniformity. In connection to this, in the article "Man's Glassy Essence" (1892), Peirce wrote:

Viewing it from the inside, looking at its immediate character as feeling, it appears as **consciousness**. These two views are combined when we remember that mechanical laws are nothing but acquired habits, like all the regularities of mind, including the tendency to take habits, itself; and that this action of habit is nothing but generalization, and **generalization is nothing but the spreading of feelings**. (CP 6.268)

If evolution is general, the unity between mind and matter is necessary; that mind is primary and that matter is diverted and special is necessary—there is a tendency to avoid sinking into the perfect sterile order—if evolution is to be possible (see Esposito, 1980, pp. 173-174).

In connection to this, **evolution must start in a continuum of pure feeling**, and this was exactly Peirce's point! Peirce's analysis lead to the view that **psychical laws evolved first**, **and that physical laws evolved from them**, which is the contrary of the modern evolutionary scientific view, but on a different philosophical basis, as it does not encompass the phenomenological view, and therefore does not include intentional or semiotic sciences.

Would-be Realism

One of the underlying causes of his change from pragmatism to pragmaticism was Peirce's adoption of a more sophisticated approach to **the reality of modal notions such as necessity and possibility**. He had changed his view from a rather nominalistic view about possibilities to being a realist; he called **real possibilities** "would-bes" (see Fisch, 1986, pp. 184-201).

As nominalistic, Peirce considered any theory that does not take the real being of laws, generalities, possibilities, universals, and so forth seriously. Concrete things—like a piece of volcanic rock—are what Peirce called seconds, but theories about the general laws behind their construction, which distinguishes them from gneiss for instance, are thirds. Peirce believed that not only do real things exist, but also the relationships among them are real. In one of his "Harvard Lectures" (1903), he considered the principle: "that all solid bodies fall in the absence of upward pressure" (EP2:181) to convince his audience of Ockhamite nominalists about thirdness being really operative in nature, and went on to illustrate this principle experimentally; the case was a stone held in one's hand. Peirce said: "If the stone is released, it will fall,"(EP2:181) accentuating that this prediction was based on experience; it would be a miracle—Peirce said—if this general principle stopped being operative in the precise moment when he opened his hand (EP2:181); and of course this did not happen. Being, like Karl Popper (1902-1994), a fallibilist, Peirce did not think that we can have absolute (true) knowledge about absolute laws. As he wrote in an untitled, unpaginated manuscript (c. 1897):

All positive reasoning is of the nature of judging the proportion of something in a whole collection by the proportion found in a sample. Accordingly, there are three things to which we can never hope to attain by reasoning, namely, absolute certainty, absolute exactitude, absolute universality. We cannot be absolutely certain that our conclusions are even approximately true; for the sample may be utterly unlike the unsampled part of the collection. We cannot pretend to be even probably exact; because the sample consists of but a finite number of instances and only admits special values of the proportion sought. (CP 1.141)

Peirce did not believe that absolute laws can have being either epistemologically or ontologically! If we could know them, our self would disappear, as Peirce saw us as part of a greater semeiotic mind in which we establish our own self through the experiences with the world. These tell us that we do not know reality in its depth or entirety. The nature of man is to make mistakes (*Errare humanum est!*). It is our fallibility which distinguishes us from the wholeness or God, as we are also by our semiotic, inferential perception placed in space and time and as such limited from any eternal wholeness beyond time and space. Thus, Peirce breaks with the Cartesian view of the self as something internal that we have and have our thoughts in. We are in thought, thinking in signs, being a sign ourselves, and all we have access to are signs; there is no real internal aspect of us only reached by introspection. No inner intuition or introspection is possible beyond thoughts, as all thoughts are signs in a common mind (including mental images). As nicely summed up in Peirce's four denials from his famous article, "Questions Concerning Certain Faculties Claimed for Man" (1868):

1. We have no power of Introspection, but all knowledge of the internal world is derived by hypothetical reasoning from our knowledge of external facts.

2. We have no power of Intuition, but every cognition is determined logically by previous cognitions.

3. We have no power of thinking without signs.

4. We have no conception of the absolutely incognizable. (CP 5.265)

Synechism, Real Chance, and the Highest Good of the Three Normative Sciences

Peirce was, as mentioned above, **deeply inspired by Kant, but he did not believe in the** *thing in itself (das Ding an sich* or the noumenon).

All there is in this world, we have access to through perception and thinking, and inquiry cannot reach a more recondite reality than that which is represented in a true representation, Peirce said in his phaneroscopic based epistemology.

Thus, he offered **an alternative to the Cartesian view of mind and being**. Peirce's view was a sort of Kantianism without a thing in itself, and he was a phenomenologist, but without a transcendental ego (contrary to Husserl's phenomenology), and a Darwinian evolutionary that was a naturalist, but not a mechanical materialist. His view of nature was not atomistic, which modern quantum field physics isn't either. Now quantum fields are more fundamental than particles.

Peirce, furthermore, did not believe that space consists of unorganized points (see Murphy, 1991). The aspect of his metaphysical architecture that supports his view of *Synechism* is a view that is close to Alfred North Whitehead's (1861-1947); for example, found is his work *Process and Reality: An Essay in Cosmology* (1929/1985), namely that **the world is a Plenum or a field where everything is connected to everything else in a continually moving process**. This proves to be an interesting influence on Whitehead's epistemology as it has as consequence that all knowledge is fallible. It cannot be proven true. In Peirce's own words:

The principle of continuity is the idea of fallibilism objectified. For fallibilism is the doctrine that our knowledge is never absolute but always swims, as it were, in a continuum of uncertainty and of indeterminacy. Now the doctrine of continuity is that *all things* so swim in continua. (CP 1.171)

In the famous articles "The Fixation of Belief" (1877) and "How to Make Our Ideas Clear" (1878), Peirce discussed convergence of different lines of inquiry as a sign from which inquirers take hope of nearing the truth.

In his metaphysics, Peirce could not accept a deterministic, mechanistic ontology, or the *doctrine of necessity*, where the world is a universal mechanism, that is, "that every single fact in the universe is determined by law" (CP 6.36).

Peirce found a number of phenomena which he meant could not be empirically explained by this conception, that is, in connection to the process of observation in the natural sciences. Peirce, who had many years of experience with laboratory work and therefore had great insight in this process, wrote: Those observations which are generally adduced in favor of mechanical causation simply prove that there is an element of regularity in nature, and have no bearing whatever upon the question of whether such regularity is exact and universal or not.

Nay, in regard to this exactitude, all observation is directly opposed to it; and the most that can be said is that a good deal of this observation can be explained away.

Try to verify any law of nature, and you will find that the more precise your observations, the more certain they will be to show irregular departures from the law. We are accustomed to ascribe these, and I do not say wrongly, to errors of observation; yet we cannot usually account for such errors in any antecedently probable way. Trace their causes back far enough and you will be forced to admit they are always due to arbitrary determination, or chance (CP 6.46).

According to Peirce, there is no empirical reason to assert the conception that everything in the universe is absolutely determined; rather, it seems to be a fact that there always will remain an instance of real chance. For instance, in the laboratory it shows that it is not possible to observe a law with exactitude. Of course, this can be explained by measuring inaccuracy, but only partly.

If one tries thoroughly to search for the cause, one will find a deeper reason, which is- the existence of real chance in the universe. Naturally, it was not Peirce's errand to deny the existence of regularity in the universe. However, he pleaded that there is no single piece of evidence that suggests that regularity is perfect and, thus, exact (see Goudge 1950: 220).

Boe: Chaostheory - initial conditions; Heisenberg

Furthermore, that absolute chance is not about naming a cause, which is unknown. If one roles the dice and the dice only show sixes, there is no invariant law which can account for this matter; this is **pure chance**. To those who might object that this fact is about naming an **unknown cause**, since every moment is subjected to precise mechanical laws, Peirce made the following comment:

it appears to me that it is not these *laws* which made the die turn up sixes; for these laws act just the same when other throws come up. The chance lies in the diversity of throws; and this diversity cannot be due to laws which are immutable. "The diversity is due to the diverse circumstances under which the laws act. The dice lie differently in the box, and the motion given to the box is different. These are the unknown causes which produce the throws, and to which we give the name of chance; not the mechanical law which regulates the operation of these causes. ..." (CP 6.55)

Every time we deal with specificity and variation, real chance is exemplified; real chance is active in or is a feature of the universe. Peirce based his ontology on Tychism, combined with a general tendency of evolution to make or take habits called Agapism.

Habits of the mind as knowing process are not absolute knowledge about absolute laws.

Real possibilities are the denial of necessity, and they are vague. The firsts are real possibilities and therefore in the now. Seconds are a concrete instance of such a possibility that has already instantiated in the past.

So, Peirce developed a view of thirds as realistic view of general tendencies, propensities, or what we have already mentioned as would-bes, as being independently real, in around 1896-97. Where James looked to practical consequences for the individual, Peirce looked at the establishment of habit also as possibilities across persons and communities—not least, research communities searching for truth. In the article "Some consequences of Four Incapacities" (1868), Peirce wrote:

The real...is that which, sooner or later, information and reasoning would finally result in, and which is therefore independent of the vagaries of me and you. Thus, the very origin of the conception of reality shows that this conception essentially involves the notion of a COMMUNITY, without definite limits, and capable of a definite increase of knowledge. (CP 5.311)

Only if the real is defined as the correlate for the consensus of an infinite community of inquiry, it can be independent of reasoning and yet cognizable (see Apel, 1995, p. 92); the real is not constituted by the consensus of an infinite community of inquiry, the real puts constraints upon the cognition of the infinite community of inquiry, and the truth of the community converges with reality.

The **concept of community** is not the highest good, according to Peirce; but the community constitutes the environment within which the scientific, intellectual activity can take place. For Peirce, the sense of community is essential for the production of scientific knowledge as well as for general religious knowledge in the aesthetic search of the common good or summum bonum, which is far beyond hedonism (CP 5.559). As Murphy (1991, p. 363) writes **the highest good "is the quality arising from order, and the more developed the order the greater the beauty**";

Peirce had a vision of **the highest good as being a kind of unity of truth, goodness and beauty**. The mature Peirce saw that there has to be **three normative sciences: aesthetics, ethics and logic**. In "Lectures on Pragmatism" (1903), Peirce put the subject-matter of the normative sciences as follows:

For Normative Science in general being the science of the laws of conformity of things to ends, esthetics considers those things whose ends are to embody qualities of feeling, ethics those things whose ends lie in action, and logic those things whose end is to represent something. (CP 5.129)

According to Peirce, the normative sciences are hierarchically related and arranged; hence, logic and ethics both depend upon esthetics, while esthetics is independent of both. In "Harvard Lectures" (1903), Peirce wrote:

A logical reasoner is a reasoner who exercises great self-control in his intellectual operations; and therefore the logically good is simply a particular species of the morally good. Ethics...is the normative science *par excellence*, because an *end* -- the essential object of normative science – is germane to a voluntary act in a primary way in which it is germane to nothing else. ... On the other hand, an ultimate end of action *deliberately* adopted -- that is to say, *reasonably* adopted -- must be a state of things that *reasonably recommends itself in itself* aside from any ulterior consideration. It must be an *admirable ideal*, having the only kind of goodness that such an ideal *can* have; namely, esthetic goodness. From this point of view the morally good appears as a particular species of the esthetically good. (CP 5.130; italics in original)

In other words, **the highest good provides a telos, that is, an aim for self-controlled action**, and creates the possibility for the goodness of action, the truth of reason and the beauty of feeling (see Anderson, 1995, p. 42)—it makes up the basis for reasoning; inquiry can move in a certain direction in accordance with the development of the universe.

The growth in the concrete reasonableness is the highest good (see Potter 1997, pp. 202-203), and **inquiry should try to contribute to the growth and render the world more reasonable through an ongoing cultivation of the habits of feeling, action and reason in accordance with the ideal**. Consequently, the claim is, as Peirce accentuated it:

Under this conception, the ideal of conduct will be to execute our little function in the operation of the creation by giving a hand toward rendering the world more reasonable whenever, as the slang is, it is "up to us" to do so. In logic, it will be observed that knowledge is reasonableness; and the ideal of reasoning will be to follow such methods as must develop knowledge the most speedily (CP 1.615).

Peirce thought that **the highest good must be general**, **self-explicatory and dynamic in constant development** (see Sheriff, 1994, p. 76), and reason lives up to these claims.

This is because reason regulates events, which instantiates it, but reason cannot be reduced to a series of events, these cannot exhaust its meaning, since reason refers to potential events. In other words, **reason is general and its being is** *esse in futuro*. Since reason in

itself is admirable, it sees, according to Peirce: "forward to an endless future and expects endlessly to improve its results" (CP 1.614). Reason is self containing and need not anything else than itself as ground; thus, any grounding must rely on reason, and yet it must not be seen as a stationary result. As Peirce noticed in "Lowell Lectures" (1903):

the essence of Reason is such that its being never can have been completely perfected. It always must be in a state of incipiency, of growth. It is like the character of a man which consists in the ideas that he will conceive and in the efforts that he will make, and which only develops as the occasions actually arise. Yet in all his life long no son of Adam has ever fully manifested what there was in him. So, then, the development of **Reason requires as a part of it the occurrence of more individual events than ever can occur**. ... This development of Reason consists, you will observe, in embodiment, that is, in manifestation. ... I do not see how one can have a more satisfying ideal of the admirable than the development of Reason so understood. The one thing whose admirableness is not due to an ulterior reason is Reason itself comprehended in all its fullness, so far as we can comprehend it. (CP 1.615)

Evolution and growth in the concrete reasonableness are synonymous. In connection to this, Peirce put forth an evolutionary ideal: Man must try to establish this ideal in himself as a belief, since what one is prepared to act upon is what one believes in—as Peirce stressed in "Vitally Important Topics" (1898): "belief is willingness to act" (CP 1.635).

Thus, according to Peirce, **evolution is not a value-neutral process** which progresses in whatever direction; rather, it is to be understood as an aesthetical-moral process which aims for the greatest good, and this with man as a privileged participator.

Mind, Matter and Evolution

After having summed up some central features of Peirce's **evolutionary metaphysics**, let us now return to the question that we have posed in the beginning of the article: in what way can **the trichotomies** from the article "The Architecture of Theories" (1891) be said to be connected? And will an attempt to analyze a possible connection between the trichotomies shed light upon the evolutionary reasoning of Peirce concerning his cosmogony? First, we must remember that the passage reads:

In psychology Feeling is First, Sense of reaction Second, General conception Third, or mediation. In biology, the idea of arbitrary sporting is First, heredity is Second, the process whereby the accidental characters become fixed is Third.

Chance is First, Law is Second, the tendency to take habits is Third.

Mind is First, Matter is Second, Evolution is Third.

Such are the materials out of which chiefly a philosophical theory ought to be built, in order to represent the state of knowledge to which the nineteenth century has brought us. Without going into other important questions of philosophical architectonic, we can readily foresee what sort of a metaphysics would appropriately be constructed from those conceptions. Like some of the most ancient and some of the most recent speculations it would be a **Cosmogonic Philosophy**. (CP 6.32-33)

(In psychology Feeling is First, Sense of reaction Second, General conception Third, or mediation.

In biology, the idea of arbitrary sporting is First, heredity is Second, the process whereby the accidental characters become fixed is Third.

Chance is First, Law is Second, the tendency to take habits is Third. Mind is First, Matter is Second, Evolution is Third.)

Let us for the sake of argument say that the list is arranged in order, then **psychology**, which must refer to human mind (feeling, sense of reaction, general concept), is related to firstness and makes up human mind. However, if we erase *human* from this trichotomy, we see that the universal mind is made of the same trichotomy. In "The Architecture of Theories" (1891), Peirce wrote that the universe develops from pure feeling.

There seems to be little doubt that **the human mind is contained in the universal** mind the human mind is a replica of universal mind, so to speak. Maybe Peirce used this example for pedagogical purposes.

If we proceed to the next trichotomy, we see that Peirce **defined biology in relation to arbitrary sporting, heredity, the process whereby the accidental characters become fixed.** In our analysis we understand this trichotomy as an example of **matter. Every element in this trichotomy refers to Darwin's theory of chance and necessity**. Darwin did not apply any third category to his theory of evolution, so this trichotomy must refer to **ananchasm or matter**.

Since it was Peirce's errand to demonstrate that philosophy requires thoroughgoing evolutionism (see Houser & Kloesel, 1992, note to the architecture of theories, p. 285), he introduced **the trichotomy of chance, law and the tendency to take habits** as an example of the necessary elements in evolution. These three trichotomies make up the important trichotomy: **Mind, Matter and Evolution**.

This trichotomy points to Peirce's **hylozoism**, that **matter is effete mind in combination with his two most important evolutionary principles: chance and synechism** (see Houser & Kloesel, p. 285).

To Peirce, evolution is identical with semeiosis—the ongoing process of representation and interpretation (see CP 5.484); as he wrote, the universe: "...is perfused with signs, if it is not composed exclusively of signs" (CP 4.539n).

The universe is conceived in terms of process, it is objectively semeiotic (see Parker, 1998, p. 198). Peirce said: "so far as there is any reality, what that reality consists is in this: that there is in the being of things something which corresponds to the process of reasoning, that the world lives, and moves, and has its being, in a logic of events" (NEM4:343-344).

Boe: semeiosis – information? Logic of events

So, in the following, we will use semeiosis and evolution synonymously. **The movement of the sign towards its object through the interpretant is a process of semeiosis**.

Since evolution takes place incessantly (every time a sign becomes interpreted) in the entire universe, we get the impression that evolution is not one single evolution, but instead it is myriads of evolutions, and that the sign web is what drives evolution forth; however, not in an accidental direction, but in a certain direction towards a growth in the concrete reasonableness, that is, the semeiotic order in the universe grows (see Esposito, 1980, p. 167). The suffix -*sis* indicates that semeiosis is a process: It passes in time and, thus, it has to be taken by its own dynamic. The movement of the sign towards the object designates a semeiosis; it takes place through the mediation of the interpretant between the sign and its object and the subsequent creation of a new sign.

Boe: cf. Deacon - teleodynamics; information - interpretation?

In this way, evolution becomes identical with the creation of meaning, since this can only be accomplished by aid of interpretation; this is the case whether we are dealing with nature interpreting itself and hence creating laws of nature, or human culture interpreting signs—both processes of interpretation are identical to processes of evolution. Consequently, creation of meaning requires interpretation and is a result of evolution. The essential part of Peirce's evolution theory is the notion of **Mind, Matter, and Evolution**: In this triad, the different parts of evolution seem to be gathered. **Mind is Firstness, Matter is Secondness and Evolution is Thirdness**. ...We suggest that the last trichotomy is the center of Peirce's evolution theory. Indeed, we will use the better part of the following analysis to argue this case. Furthermore, we will add Peirce's notion of **Tychasm** to the idea of Mind, **Ananchasm** to Matter and **Agapasm** to Evolution, as Peirce wrote in the article "Evolutionary Love" (1898):

the mere propositions that absolute chance, mechanical necessity, and the law of love are severally operative in the cosmos may receive the names of *tychism*, *anancism*, *and agapism*. (CP 6.302)



Phenomenologically, **Mind consists of feeling as Firstness, sense of reaction as Secondness, and general conception as Thirdness**.

Matter, on the other hand, consists of arbitrary sporting as Firstness, heredity as Secondness, and fixation of accidental characters as Thirdness.

Evolution consists of chance as Firstness, law as Secondness, and tendency to take habits as Thirdness.

However, prior to the analysis, a couple of issues need attention. Peirce wrote that the first trichotomy (feeling, sense of reaction and general conception) comes from psychology and addresses mental action and, thus, man. How does this harmonize with the idea of a universal Mind where feeling is Firstness? We believe Peirce saw the universe as the place from whence feeling originates, and, taking his theory of Synechism into account, feeling is led into human Mind through evolution, that is, human Mind seems to be displaced from the universal Mind and, thus, contains aspects of this original feeling.

At the center of Peircean metaphysics is the idea that evolution mediates between Mind and Matter, and as suggested, Mind is not understood here in terms of the human mind alone. **Human mind shares qualities with the universal mind, for example, because man evolved from universal feeling**. Therefore, feeling is the absolute first in cosmos, and, at the same time, also the absolute first in man, but at a different level. Since **man is a manifestation of universal Mind, he must be a symbol in an universe which in itself is a great argument** (see CP 5.119). Consequently, we place man as a representamen of universal mind in the first trichotomy.

Feeling is Firstness, sense of reaction is Secondness and general conception is Thirdness.

This triad is the point of departure for dividing the basic categories into Firstness, Secondness and Thirdness, and **the triad constitutes Peirce's theory of the law of habits** (CP 3.348, 3.390, 1.23).

Peirce defined *feeling* to be anything present as a potential being. In this way feeling is defined in respect to Firstness. Sense of reaction constitutes Secondness, and designates the reaction which occurs in the actual presence of two feelings. In "The Architecture of Theories" (1891), Peirce used a feeling of blue as an example. As he wrote:

Suppose I had nothing in my mind but a feeling of blue, which were suddenly to give place to a feeling of red; then, at the instant of transition, there would be a shock, a sense of reaction, my blue life being transmuted into red life. If I were further endowed with a memory, that sense would continue for some time, and there would also be a peculiar feeling or sentiment connected with it. This last feeling might endure (conceivably I mean) after the memory of the occurrence and the feelings of blue and red had passed away. (CP 6.19)

Boe: feeling - qualia

General conception is the connection between feeling and the sense of reaction which is determined by a general rule, which is a habit. In the same article, Peirce also accentuated:

Very different both from feelings and from reaction-sensations or disturbances of feeling are **general conceptions**. When we think, we are conscious that a connection between feelings is determined by a general rule, we are aware of being governed by a habit. (CP 1.20)

This means that **Thirdness, which is defined as habit formation**, occurs *within* the sign. It is not an element which is brought onto the sign from the outside, but on the contrary **exists** within the sign as a latent part brought into action when the representamen is manifested, so the sign in itself has a tendency to take habits.

Thirdness expresses the sign's nature for seeking stability. This triad sums up the relationship between Firstness, Secondness and Thirdness within the human mind. But Peirce is a bit more complicated; in "The Architecture of Theories" (1891), he wrote:

in the beginning -- infinitely remote -- there was a chaos of unpersonalized Feeling, which being without connection or regularity would properly be without existence. This Feeling, sporting here and there in pure arbitrariness, would have started the germ of a generalizing tendency. Its other sportings would be evanescent, but this would have a growing virtue. Thus, the tendency to habit would be started; and from this, with the

other principles of evolution, all the regularities of the universe would be evolved. At any time, however, an element of pure chance survives and will remain until the world becomes an absolutely perfect, rational, and symmetrical system, in which mind is at last crystallized in the infinitely distant future. (CP 6.33)

Boe: Teilhard de Chardin - Morowitz: emergence

Peirce wrote that **the sporting of Feeling in pure arbitrariness has created a tendency to take habits. This tendency is the germ to a more generalizing tendency**. But within this germ, other germs' existence will last only briefly. The tendency to take habits is started. But if we return to Peirce's ideas on the creation of the universe, it seems evident that figure 3 illustrates the starting point in Peirce's evolution theory.



Figure 3: The semeiosis oft he universe. This triad constitutes Mind.

In this triad, we gain our idea of the creation of the universe. We have **the epistemology consisting of Firstness**, **Secondness and Thirdness**, **and we have the representamen in its most original form**.

Universal feeling is the absolute First in the most general and potential sense. Sense of reaction is a concrete manifestation of feeling, and the mediation is ensured and upheld by general conception.

This means that **the mediation between feeling and sense of reaction creates a generality on which further evolutions build**. Initiating the coming discussion in the article, it seems that the general conception is identical to the legisign, because they are both defined as Thirdness within Firstness.

In this Firstness category, we have the first Firstness, but we also have Secondness and Thirdness. Alas, **in Firstness there exists Secondness and Thirdness**, **so we have potentiality, manifestations and generality**. But these concepts are not completely developed. They need something else. It is important to realize that even though we are discussing pure Firstness **there has to be a ground for manifestations and a generalizing tendency even in the most original sense of Firstness**. Peirce wrote in "A Reply to the Necessitarians" (1983):

I go back to a chaos so irregular that in strictness the word existence is not applicable to its merely **germinal state of being**; and here I reach a region in which the objection to ultimate causes loses ist force. But I do not stop there.

Even this nothingness, though it antecedes the infinitely distant absolute beginning of time, is traced back to a nothingness more rudimentary still, in which there is no variety, but only an indefinite specificability, which is nothing but a tendency to the diversification of the nothing, while leaving it as nothing as it was before.

What objectionable ultimacy is here? The objection to an ultimate consists in its raising a barrier across the path of inquiry, in its specifying a phenomenon at which questions must stop, contrary to the postulate, or hope, of logic. But what question to which any meaning can be attached am I forbidding by my absolute chance?

If what is demanded is a theological backing, or rational antecedent, to the chaos, that my theory fully supplies. The chaos is a state of intense feeling, although, memory and habit being totally absent, it is sheer nothing still. Feeling has existence only so far as it is welded into feeling. Now the welding of this feeling to the great whole of feeling is accomplished only by the reflection of a later date. In itself, therefore, it is nothing; but in its relation to the end it is everything. (CP 6.612)

Given this interpretation, it seems that Peirce built the next triad from the interpretant in this triad. When semeiosis occurs in this triad we get the concept of arbitrary sporting. Returning to the quotation, Peirce said that:

This Feeling, sporting here and there in pure arbitrariness, would have started the germ of a generalizing tendency. Its other sportings would be evanescent, but this would have a growing virtue. (CP 6.33).

This means that this **impersonalized feeling has started the evolutionary process and has caused a generalizing tendency**. The tendency originates from the interpretant in figure 3, **general conception, which creates stability for further development**. This stability makes the ground for development of arbitrary sporting. So, **Firstness in the second triad is arbitrary sporting whereas Secondness is heredity and Thirdness is fixation of accidental characters**. Bearing the categories in mind, Firstness is generality and potentiality, Secondness is a concrete manifestation of Firstness.