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Development of agency as semiotic empowerment: A Peircean analysis

Abstract: The chapter provides a naturalist-pragmatist analysis of agency and its development across the continuum of biological and social processes of signification using Peircean tools such as phaneroscopic categories, semiotic triangle, the tenfold Sign, as well as inquiry, habits, representation, and hard and soft facts.

The sensorimotor agent is a simple semiotic system: an organism with “direct coupling” with the environment. The embodied basis of its learning enables the development of agency. Meaning is located in habits of action, as habits allow for the prediction of future. Through hard and soft facts, we negotiate our position in the world. For that, inquiry involves constant evaluation of the relation of the Signs of ourselves and other Objects, including other subjects. The communicative revelation empowers the instrumental agent to claim the semiotic space of opportunities to operate with signs for self and for others to interpret, reaching the full extent of semiotic agency.

Keywords: agency, inquiry, Peirce, semiosis, mind

1 Introduction

The theme “*Cross–Inter–Multi–Trans*” aptly points to the complex of relations and interactions in signifying processes, both within and across them.¹ Signs are ubiquitous, and semiotics, as a scientific discipline with long and diverse traditions, examines the signs, their essence, operation, meanings, and values from sociocultural practices to biophysical processes and back. Somewhere in between that bipolar distinction – as far as the distinction within the continuum ought to be made at all – is the individual, each with their own ways of participating in signifying processes, of perceiving the qualities of the world

¹ The article is based on a master lecture given at the 13th IASS-AIS World congress of semiotics “*Cross–Inter–Multi–Trans*”, June 26–30, 2017, at the International semiotics institute and Kaunas technological university, Kaunas, Lithuania.

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and of engaging in action upon the objects of the world, thereby functioning, growing and living in the world of relations, interactions, and meanings. From the humanist perspective, that is where the bottom line is, finally: how the human being is, acts, and exists in the world of signs, meanings, and signifying processes.

The signifying processes are practices, *praxis*, in that they are actual, habitual, and contextual. Praxis takes place only through *action*, activity of an *agent*: a change, a difference – a vicissitude (CP 1.336) – is a necessary condition for signification. That activity takes more or less established and dynamically changing, habitual forms – *habits* – of acting, perceiving and interpreting, of encoding, mediating, and decoding the signs. How, or what kind of habits are involved in the processes, clearly depends on what kind of *situations*, acts, or events constitute the complex of relations between the individual, and the world, including the others – and on what kind of habits are at the agent's disposal, that is, on the agent's semiotic capacity to act.

In many ways, then, action and *agency* are at the core of these important issues of signifying processes. Consequently, vast bodies of research have been pursued on a variety of related issues. Instead of, e.g., reviewing and synthesizing that literature, what now follows is a synopsis, a naturalist-pragmatist synoptic analysis of the notion of *agency* and its development across the biological and social continuum of signifying processes, with Peircean tools such as inquiry, habits, and the semiotic triangle, as well as the tenfold division of the Sign. Thereby, the problem of agency is here considered a semiotic problem. Action being central in many ways to Peirce's pragmatism and in his semeiotic theory, the Peircean approach seems appropriate for the analysis of agency. The monism across the biological and social comes with the underlying naturalist pragmatism. However, in terms of development, I am now not making distinctions between phylogenetic *versus* ontogenetic development. I shall rather focus on the systemic view of semiosis.

My personal interests in engaging with semiotics primarily have to do with signification *of and in* music, as well as signification *of and in* learning, in very practical matters of music education. In terms of both practices and special sciences of music and learning, one of the central viewpoints if not the main one, is that of *agency*. Also, both music and learning are sociocultural practices and biophysical processes. Neither learning (or growth) nor musicking (or the arts at large) are ultimately inseparable from one another, nor from semiosis in general. Therefore, towards the end of the article, I shall briefly discuss agency in music and learning as an example.

2 The phaneroscopic categories and inquiry

Before getting to agency, let us briefly summarize the Peircean arsenal. The *phaneroscopic categories* serve as an axiomatic basis that permeates the Peircean tools (Ojala 2009: 17, 248), phaneroscopy being Peirce's "phenomenology", and category "an element of phenomena of the first rank of generality" (CP 5.43), irreducible classes by which phenomena can be divided. Of the three categories, *Firstness* is characterized by immediacy, possibility, potentiality, lack of reaction or analysis, spontaneity, feeling, and unreachability. In contrast, *Secondness* is accredited with duality, particularity and individuality, action and reaction, struggle and effort, brute force, fact, and existence. Finally, *Thirdness* is attributed with mediation, law, generality, habit, connection, continuity, thinking, representation, and prediction. (See, e.g., CP 1.300–353, CP 8.327–332; Bergman 2004: 133–170; Short 2007: 60–90; Ojala 2009: 248–257).

While the viewpoint of phaneroscopy may seem to be the experiential "within", it is also tightly connected with the actual world, and ultimately describes the subject in the world of relations, interactions, and meanings. In order to address the dynamic and complex interplay between the subject and the world – and the signifying process, or *semiosis* – Peirce's notion of *inquiry* is handy. The gist is that a living organism (as an actual object among other actual objects of the world) is engaged in interaction with its environment by means of perception and action. Each action is an instantiation of an organism's habits of action and more or less affects the objects of the world, contributing to its situations. The encountered situations, their objects, and their features can more or less be perceived, and interpreted. It is noteworthy that the situations include the organism itself, as well. The perception and interpretation of the situations accumulates into experience: according to Pentti Määttänen (2015: 23) "[e]xperience is, generally speaking, orientating to possible future experiences on the ground of past practical experience". (In this sense, the accumulative experience should be distinguished from particular sense experience, or feeling.) Interpretation may yield further habits of action, enforce existing habits, or lead to adjustment of the habits. Namely, any incongruence or mismatch between the existing habits and the interpretation of situations raises what Peirce calls "irritation of doubt that causes a struggle to attain a state of belief" (CP 5.374). Inquiry ceases when a satisfactory state of belief is attained, until further mismatch causes further irritation of doubt, and the cycle of inquiry begins again. According to Määttänen (2015: ix), "[h]abits are beliefs, but they are not internal units, properties of the brain or the body. Habits are modes of interaction, structured schemes of action, which are formed when action accommodates to objective conditions of action. Habits become beliefs about those conditions of action."

This process where the organism asymptotically adapts to the environment is what inquiry in a broad sense is about (see e.g. CP 5.374–384; Ojala 2009: 25–34). Indeed, semiosis is an adaptive process of inquiry. Noting that as far as the environment and the organism are in continuous change, consequently the habits, the beliefs are in continuous change, as well.² This dynamic, cyclic system of practical inquiry (as opposed to scientific inquiry) can be illustrated by the *semiotic triangle* (Fig. 1; Määttänen 1993: 40–54; Ojala 2009: 267–270, 2018; cf. e.g. Ogden and Richards 1936: 11; Merrell 1997: 10–22; CP 2.264, 4.310, 8.376).

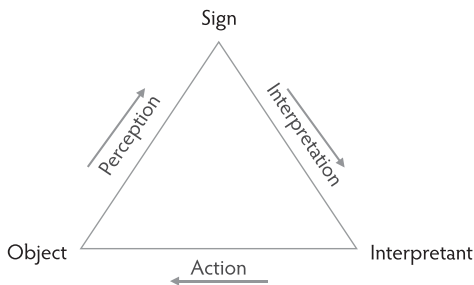


Fig. 1: The semiotic triangle.

The semiotic triangle portrays the Peircean notion of the Sign. According to Peirce (CP 2.274),

A *Sign*, or *Representamen*, is a First which stands in such a genuine triadic relation to a Second, called its *Object*, as to be capable of determining a Third, called its *Interpretant*, to assume the same triadic relation to its Object in which it stands itself to the same Object.

The Sign is “determined by an Object”, and the Sign determines “an idea in a person’s mind” termed “the *Interpretant* of the sign” which “is thereby mediately determined by that Object” (CP 8.343). Since the habits of action – meanings – are a result of the process of perception and interpretation, i.e., of the triadic relation of the Sign, to grasp the notion of agency from the semiotic perspective, a further examination of the Sign is necessary.

² Here, beliefs, habits, and meanings – even truth – become conflated. Beliefs are habits of action, meanings are located in habits of action. Likewise, inquiry, semiosis and logic become fused to one another (CP 2.227: “Logic, in its general sense, is, as I believe I have shown, only another name for semiotic (σημειωτική), the quasi-necessary, or formal, doctrine of signs.”).

3 The tenfold sign

Peirce's ten classes of Signs are based on three trichotomies, each following his phaneroscopic categories of Firstness, Secondness, and Thirdness, displaying the trifurcation into categories of possibility, existence, and law in each of the three Correlates of the Sign. The three Correlates, corresponding to the triadic relation of the Sign, are the Sign itself, its relation with its Object, and its relation with its Interpretant. (CP 2.243–264) Tab. 1 gives a summary of the divisions of the Sign, based on the three tripartitions. It also gives the six transitions between the classes (Ojala 2009: 308, 2006, 2010).

Tab. 1: Summary of the division of the Sign to ten classes.

Category →		First		Second		Third
↓ Correlate			Transition		Transition	
1st	Sign in itself	Qualisign	Manifestation	Sinsign	Definition	Legisign
2nd	Sign– Object	Icon	Selection	Index	Correlation	Symbol
3rd	Sign–Interpretant	Rheme	Binding	Dicent	Understanding	Argument

The ten classes are traditionally depicted as triangles, but due to the three inter-linked trichotomies, it is better to think of them as a three-dimensional model of the full-fledged Sign (Fig. 2).

I start by observing the First correlate, the Sign in itself. A Qualisign differs from a Sinsign in that a Qualisign is “a quality which is a Sign” (CP 2.244), but since it is a First in all respects, it can “only form a sign through being actually embodied” (CP 2.245). As the potential of the Qualisign is *manifested*, it becomes a Sinsign, that actually contributes to a Sign. It is “an actual existent thing or event which is a sign” (CP 2.245). Sinsigns exist as particular instances. However, although actually existent, alone it stands in relation to nothing, except for the qualities it embodies. It needs to be in relation with other Sinsigns, i.e., with a relevant accumulation of Sinsigns. This takes us to Thirdness of the First correlate: the law-like character of the Legisign. A Sinsign is consequential and functional only in relation to a corresponding Legisign, which reciprocally needs its Sinsign (its replica, as Peirce called it) in order to signify (CP 2.246). Hence, each Sinsign is *defined* by Legisign, and reciprocally, each Legisign may be affected by the particular Sinsign.

As regards the Second correlate, the relation of the Sign with its Object, first, an Icon denotes its Object “merely by virtue of characters of its own”, regardless

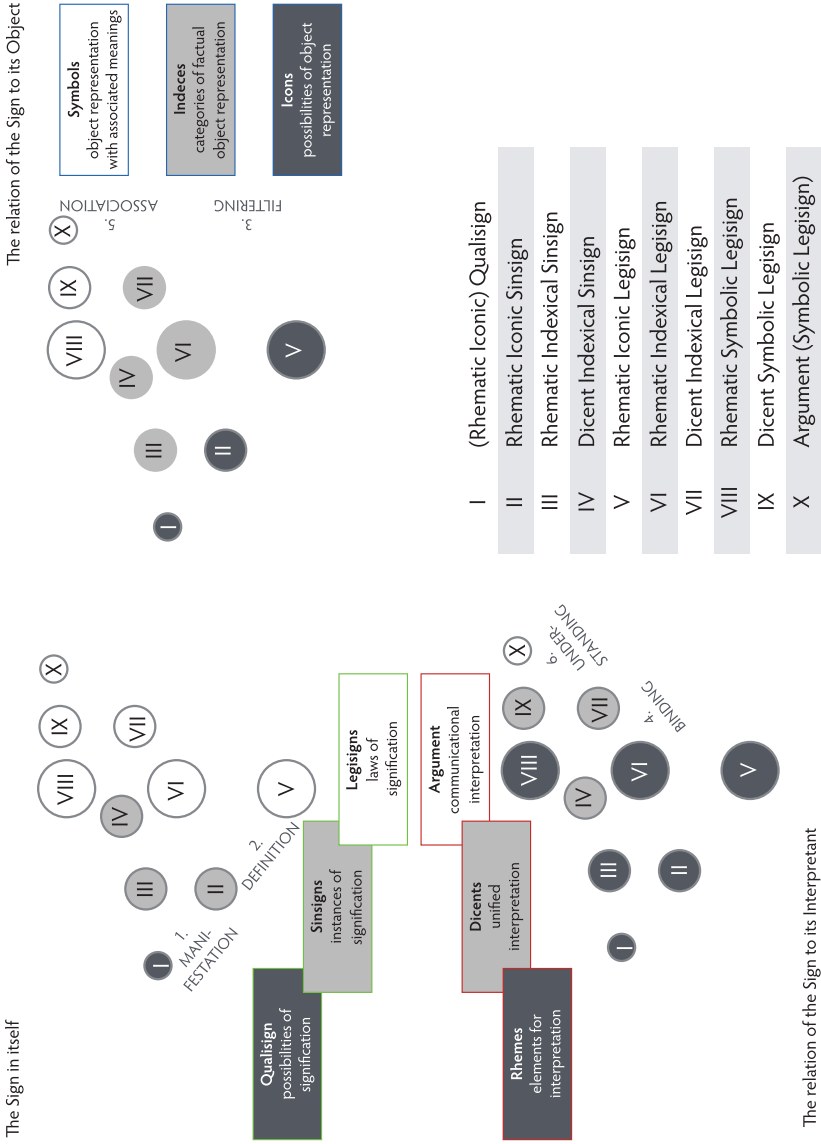


Fig. 2: A three-dimensional model of the tenfold Sign, with the three viewpoints of the three correlates.

of “whether any such Object actually exists or not” (CP 2.247), while, second, an Index “denotes by virtue of being really affected” by its Object (CP 2.248). In other words, while Icons are only a possibility for representing the Object, Indices have a real connection between “the sign and the thing signified”, i.e. the Object of the Sign (see e.g. CP 1.372, CP 2.299). Although Peirce gave examples of a weathercock being an Index, as it is affected by wind (CP 2.286, CP 2.428), he also pointed out, that (MS 797: 10; quoted in Bergman 2004: 426) “I have defined index or indication as a sign by virtue of physical connection. Experiential connection would be more explicit; for I mean by physical connection that the sign occurs in our experience in relation to the when and where of the object it represents.”

This points towards understanding the Index (when a thought-sign) as a Sign that distinguishes between the qualities manifested in Sinsign at large and those pertaining to the particular Object of the Sign. That is, in moving from Icon to Index, the qualities meaningful for representing the Object have been *selected, filtered* from those that are not. This emerging ability to represent selected qualities and objects of the world is clearly pivotal for semiosis – and for developing agency.

Symbols, in turn, consist in Indices thrown together – *symballein*, as Peirce (CP 2.297) pointed out, that is, Indices *associated, correlated* with other Indices. This opens an avenue for going beyond a factual representation of the world, extending to the genuinely subjective experience.

Concerning the Third correlate, the relation of the Sign with its Interpretant, Rhemes are Firsts, in that they are potential, in terms of interpretation of the Object, but not more. The qualities of the Object may be manifested, but they are not yet *unified, bound* together in order to enable the interpretation of the Sign as the Object. According to Peirce, a Rheme may “afford some information; but it is not interpreted as doing so” (CP 2.250), while a Dicent sign is “a Sign of actual existence” (CP 2.251). Finally, the Argument extends the associative character of the Symbols to a metalevel in the sense, that the interpretation extends to the very processes themselves, revealing the semiotic (communicative, interactive) character of Sign in the process. Peirce described the Argument as “a Sign which is understood to represent its Object in its character as Sign” (CP 2.252). We will get back to the ten classes after discussing the notion of agency below.

4 Agency and the sensorimotor agent

The Oxford English Dictionary defines ‘agency’ (in the current sense) as “ability or capacity to act or exert power” and as “action or intervention producing a

particular effect; means, instrumentality, mediation” or “such action embodied or personified; a being or thing that acts to produce a particular effect or result” – which is by and large common sense.

In Anthony Giddens’s social structuration theory and stratification model (1984: 2–40), agency, together with action, meaning and subjectivity, is in interplay with social structures, and the interplay of individual actors and societal structures dynamically constitutes the social practices ordered across space and time. For Giddens (1979: 55), agency “does not refer to a series of discrete acts combined together, but to a *continuous flow of conduct*”. The concept of agency involves “‘intervention’ in a potentially malleable object-world” and “relates directly to the more generalized notion of *Praxis*” (Giddens 1979: 56, *emphases original*).

In Albert Bandura’s social cognitive theory, beliefs of personal efficacy are the foundation for motivation, well-being, and accomplishments, while at the same time agency and social structures are also interdependent. Bandura (2006: 3–5, 2001: 6–11) lists four core features of agency: intentionality, forethought, self-regulation by self-reactive influence, and self-reflectiveness about one’s capabilities. Within this interdependency, Bandura (2006: 5) distinguishes between individual, proxy and collective modes of agency.

Carrie Noland (2009: 9) defines, first, *embodiment* as “the process whereby collective behaviors and beliefs, acquired through acculturation, are rendered individual and ‘lived’ at the level of the body”, and subsequently, *agency* as “the power to alter those acquired behaviors and beliefs for purposes that may be reactive (resistant) or collaborative (innovative) in kind”, *embodiment* appearing subordinate to acculturation.

The current pragmatist and semiotic perspective quite happily agrees with social and embodied views of agency, namely with the idea of dynamic equality between agent and structure or reflexivity and structuration present in the Giddensian theory. This gives weight to self-reflection, contextuality and temporality surpassing the beliefs of personal efficacy presented by Bandura, and with the perspective of embodied (and situated, and distributed) cognitive science of “the close interrelatedness of the so-called ‘biological’ and ‘cultural’ aspects” (Lindblom 2015: 2), in which cognition is “forever leaking out into its local surroundings” (Clark 1997: 82). Reciprocally “the objects of environment belong to the functional organization of mind” (Määttänen 1993: 17), making the borderline between ‘us’ and the ‘world’ *fuzzy*, and finally, non-existent.

This interplay, that produces the social subjects and their agency, and its role in the origin and development of the process of signification, and the emerging *semiotic empowerment* deserve a closer look. At the simplest stage, it is better not to talk about agent or subject. Instead, the interplay first consists of an organism reacting to stimulus, a “direct coupling” as Peter Gärdenfors

(2000: 122) put it, functioning as what Philip Johnson-Laird (1983: 403–405) called a Craikian automaton or Pentti Määttänen (1993: 64–69) the s-model (for *spatial* model), from rudimentary perception or preperception to predetermined re-action, unsophisticated action. Input is simply mapped to output, more or less in a fixed way. This has been traditionally exemplified by the gill and siphon withdrawal reflex of the *aplysia californica*, the Californian sea hare (e.g., Castellucci and Kandel 1976; Churchland 1992: 70–77). Yet each of us has traces of this kind of direct coupling, for instance, as the vestibulo-ocular reflex that controls the eye-movement of the moving head (cf. Angelaki and Cullen 2008).

Here, a distinction should be made between causation and determination: At this point, the mapping of the input to the output is both causal, in that the one causes the other due to the solid ontological (and epistemological) connection of the organism and the actual world (hence naturalism without the Cartesian divide). The mapping is also relatively deterministic, in that (the quality and quantity of) the output is a relatively simple *function* of the input. However, as the system of signification develops and grows from the simple interplay of organism and other objects into a semiotic process of perception, interpretation and action, depicted by the expansion of the direct coupling into the semiotic triangle (Fig. 3), the dependency of the output on the input – or at that stage: the dependency of the interpretation on the perception – becomes immensely more complex and less predictable. However, even then, the causality prevails, due to the strong ontological and thereby solid epistemological connection.

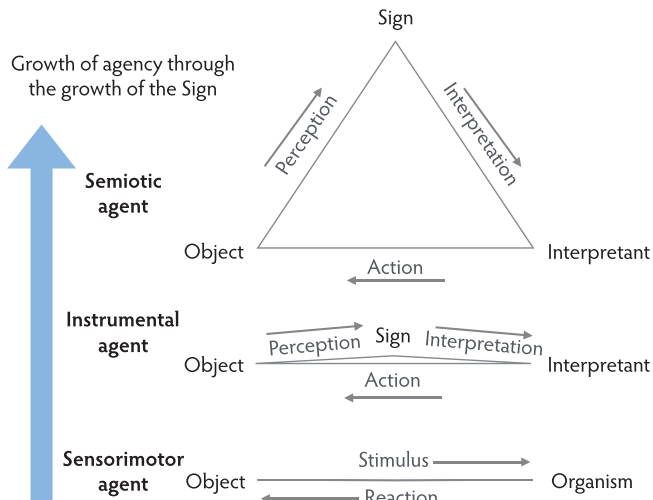


Fig. 3: The growth of agency from the “direct coupling” of sensorimotor agent to the semiotic triangle of semiotic agent.

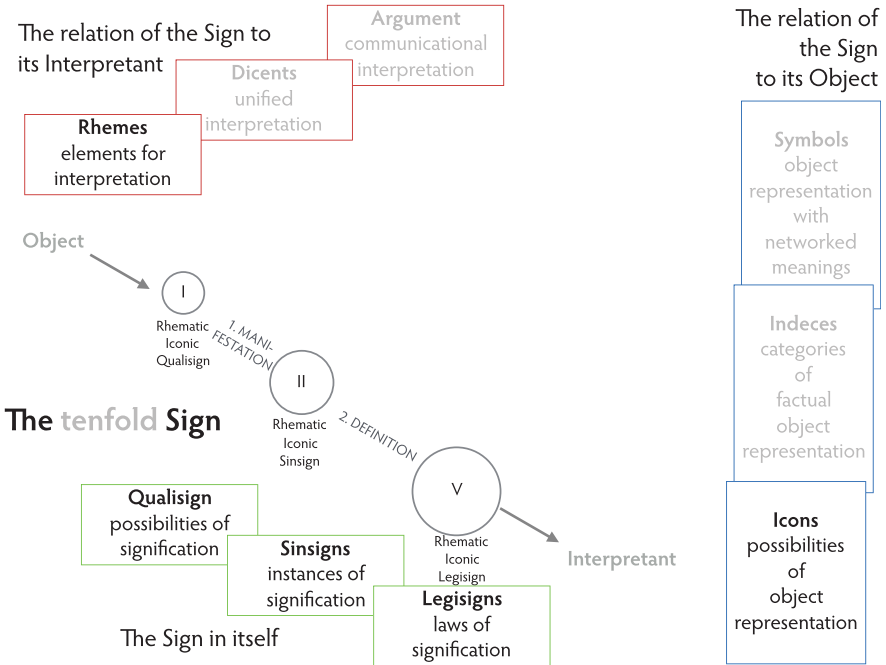


Fig. 4: The simple semiotic system of sensorimotor agent.

A system of a sensorimotor agent, i.e., an organism with a “direct coupling” with the environment, is a simple semiotic system (Fig. 4). There is no fully functional Sign to speak of, and instead of deliberate action based on the interpretation of the sign produced in the perception of the object, the organism (vs. subject, at this point) simply reacts to stimulus. In terms of Peirce’s tenfold Sign, the sensorimotor agent operates on *rhematic icons*, but not more: The Sign in itself has the possibilities, instances, and laws of signification, albeit rudimentary, but is not capable of making *subjective, contextual* selections of features critical to the objects of the world, nor is therefore capable of representing the (f)actual objects, nor interpreting the situations of the world in unified let alone communicational ways. In other words, there are *no indices or symbols, nor dicents or argument*. This deterministic signifying mechanism *may* rupture into a fully developed system, to the “indirect modes” of cognition (Gärdenfors 2000: 122) as the habits of reacting evolve into habits of perception, thinking, and action. It is evident that there need be both biophysical mechanisms allowing this and sufficient “environmental pressure” (from the interaction with objects of the world) to drive such expansion.

5 Sensorimotor inquiry, habit, and learning

Given the sensorimotor agent, habits can be construed as the loci of meaning, although there seems to be no distinction between habits of perception, thinking, and action. Let us now return to the tenfold Sign, to consider agency from the semiotic viewpoint in closer detail. As noted, the possibilities of semiosis in Qualisign are causally *manifested* – embodied – as the particular, actual, but temporally volatile Sinsigns. Sinsigns alone are not *meaningful* unless correlated to others and thereby *defined* in relation to the dynamic patterns or the law-like Legisigns which are reciprocally determined by them.

This kind of sensorimotor inquiry is the embodied basis of learning, which makes it possible to develop agency. The sensorimotor agent is capable of developing meanings as habits of action through the interplay of action upon objects and the perception of objects, and the interplay of Sinsign and Legisigns. It is thereby capable of learning – as far as learning is understood functionally as emerging and developing habits of action (see CP 7.536; and for *edusemiotics* e.g. Houser 1987; De Tienne 2003; Olteanu 2015; Semetsky 2017a; Ojala 2018), as changes of behavior that serve the adaptation and functioning of the learner in the world.³ Reversely, the sensorimotor agent is also capable of forgetting (albeit the processes may be simple, such as the habituation and sensitization in the case of the sea hare gill and syphon withdraw reflex).

This resonates with the pragmatist view of meaning being located in the habits of action. In Peirce's words, “[t]he whole function of thought is to produce habits of action” (CP 5.400). Habits are beliefs, habits are meanings, and vice versa (cf. Määttänen 2015: 29–35). The law-like character of the Legisign is crucial, because in addition to defining the Sinsign, it expands semiosis beyond the here and now of the Sinsign into comprehensive temporality, enabling the accumulation of past experience and anticipation of future situations. According to Peirce (CP 2.148), “every habit has, or is, a general law. Whatever is truly general refers to the indefinite future; for the past contains only a certain collection of such cases that have occurred,” and the “mode of being” of the law, is “*esse in futuro*”. This opportunity to rely on habits (a.k.a. meanings of object of the world, or beliefs concerning the *logic* of the world) allows us to make (more or less successful) predictions of the future, based on our accumulated experience. As Pentti Määttänen (2015: 12) put it: “The world is experienced as possibilities of action (affordances), and the object of experience and knowledge is the

³ At this point, the personal pronouns such as ‘she’ or ‘he’ are not applicable, as there is no subject.

relationship between two experienced situations: the present situation here and now and the future situation that is an outcome of some way of acting.”

According to Gärdenfors (2000: 122), the only way the more refined decision procedures, beyond those triggered by perceptions alone, can be created, is “with the aid of the experience of the agent”. Gärdenfors (2000: 122) also emphasized the very pragmatist principles in stating, that “[t]o be useful, the procedures should not only be applicable to known cases, but should *generalize* to new situations as well,” which points to the law-like characteristics of the Legi-signs and habits of action. As far as the environmental pressure and inquiry as the driving force necessary for the survival or well-being of the organism are concerned, Gärdenfors (2000: 123) furthermore asserted that “[i]f the agent realizes that it has made a mistake, it will adjust the application rules for the concepts that led to the error”. This, again, is in harmony with the notion of inquiry, driven by fallibility of beliefs (and habits), and the “irritation of doubt that causes a struggle to attain a state of belief” (CP 5.374). The ever-lasting inquiry entails continuing processes of action and perception, resulting in accumulation of experience, and thereby – when successful – further development, learning and growth of the signifying system, involving the remaining seven classes of Sign.⁴ If there is biological potential for growth, the growth of semiosis may result in *semiotic rupture*, in breaking up of the deterministic signifying mechanism into a fully developed system of signification, and agency.

6 From sensorimotor system to factual representation

The key distinction between the rudimentary sensorimotor and the more developed semiotic process is *representation*. The semiotic rupture from the sensorimotor semiosis results from growth into factually re-presenting the world, its objects and their qualities. This is clearly beneficial for the organism, if biologically possible, and hence its growth to subject and a true agent, when possible. Namely, with the more “indirect modes” of cognition, i.e., with more accurate and complex representation, by virtue of the more complex Sign, the organism may better not only represent the world, but also predict its events and situations, its actions. Clearly, developed agency in the form of intentional, goal-oriented and reflective action on objects of the world (versus random, fortuitous

⁴ Hence also John Dewey’s notion of learning by doing (e.g. MW 4.178–188; Semetsky 2017b).

action) is only possible if there is an ability to represent the objects. As noted, the whole function of thought is to produce habits, and those habits go beyond the immediate temporality (a Second), extending to anticipation, prediction (a Third). The preparedness for future situations, improves the chances of successful action – agency, which in turn again increases opportunities to interact, perceive and, in turn, represent and interpret. In other words, there is a kind of positive learning cycle to be formed.

This development requires that features essential for (sufficiently accurate or rewarding) representation are adequately *selected*, *filtered* out from the chaotic, continuous stream of perception, and that the perceived – or selected features of different qualities are *bound* together into representations of objects of the world (Fig. 5).⁵ This becomes a transition from the Peircean possibility of Firstness to the actuality of Secondness both in the relation of the Sign to its

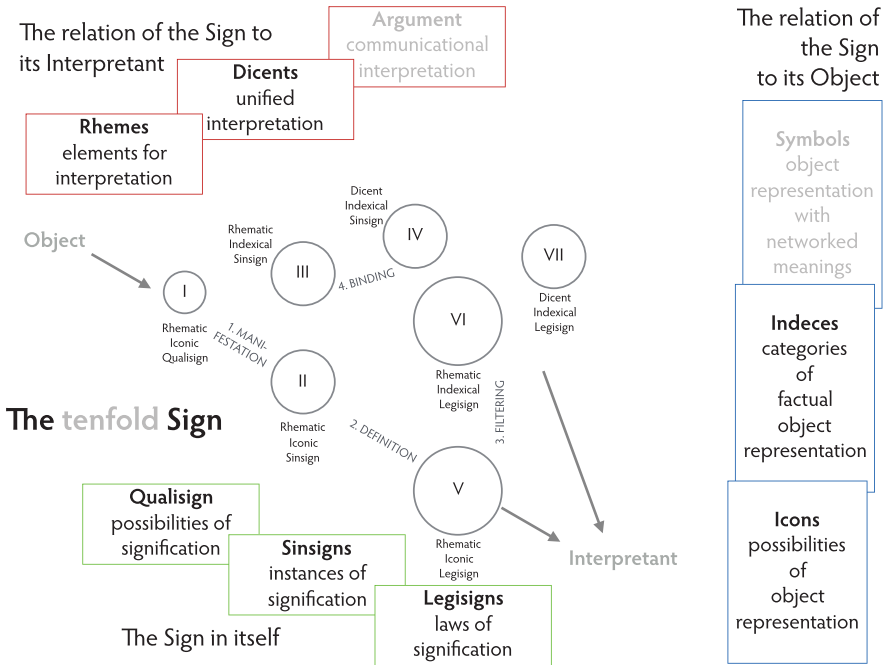


Fig. 5: The intermediate semiotic system of agent capable of representation.

⁵ The choice of the word connects and corresponds with the ‘binding problem’ in psychology, cognitive science, and philosophy of mind. See, e.g., Cleeremans 2003.

Object and, subsequently, in the relation of the Sign to its Interpretant. In brief, the Sign expands from Icons to Indices and from Rhemes to Dicents.

By this point, the changes in Legisigns, the patterns and laws for defining Sinsigns, have been affected by the perceivable qualities of the Objects. Already the Iconic Legisign (of simple semiotic system) serves as a rudimentary accumulation of experience. However, once the rules for filtering and binding are formed, the perceptual–interpretative process becomes more complex and more dependent on the particular history of the semiosis – *experience* – i.e., on the existing and emerging beliefs and meanings. Habits become habits of perception, action, and thinking when the interplay of mutual determination between the Sinsigns and Legisigns continues and the semiotic triangle grows to include the remaining classes of Sign. There is interplay or feedback between what could be called higher and lower levels of semiosis. This is parallel to the system implementing semiosis in animals, i.e. natural neural networks, which constitute complex systems with ascending and descending (or sensory and motor, afferent and efferent) pathways, so that the “higher” levels affect the processing of the “lower” ones, while the “lower” ones feed the “higher” ones (see, e.g., Valenta and Fiala 2012).

With the rupture that expands the semiotic triangle from the “direct coupling” to subjective representation of the world, we approach the everlasting topic of nature and nurture, the roles of the biological or physical possibilities and constraints versus the influence of the environment, including those of other subjects and their agency. We eventually approach the topic of self-reflectivity and metacognition, as well, that is, the self-regulation of developing the habits of feeling, thought, and action.

The ways in which factual objects become represented depend on what the qualities of objects in the world are available for perception and interpretation (and clearly on the organism’s perceptual abilities as well). It is fundamentally important to note that for semiosis, this also includes the organism itself as an object in the world – which is the basis for the representation and understanding of organism itself, the self and subjectivity.

7 Apparent but false duality of processing

Note that in the three-dimensional model of Peirce’s tenfold Sign, there are no Sinsigns at the level of Symbols. The Sinsigns are indeed signs of *particular* qualities of Object (Rhematic Icons), selected qualities (Rhematic Indices) and selected qualities bound together for the unified representation of Object (Dicent

Indexical Sinsigns), which are Seconds “on all accounts” (CP 2.243–264), that is, in terms of all three Correlates of the Sign. The Sinsigns are all defined by their mutual relations with the corresponding Legisigns. In this sense, the Legisigns, as laws, are the locus and constitution of the representations, the accumulating experience, meanings, and habits – beyond the interpretation of the volatile Sign of a particular situation of the world.

As noted earlier, once we have the factual representation of the Object with the particular (Sin)signs, both in terms of selected features (Rhematic Indices) and a unified interpretation of the features representing the Object (Dicent Indices), these representations, that is, the Legisigns corresponding to the Sinsigns, may be associated, thrown together with Legisigns representing *other* Objects, thus forming Symbols in the Peircean sense. (This is why no Sinsigns are necessary on the Symbolic level of the model.) Symbols are about the relations, connections, a.k.a. *associations* of represented objects and their features (Fig. 6).

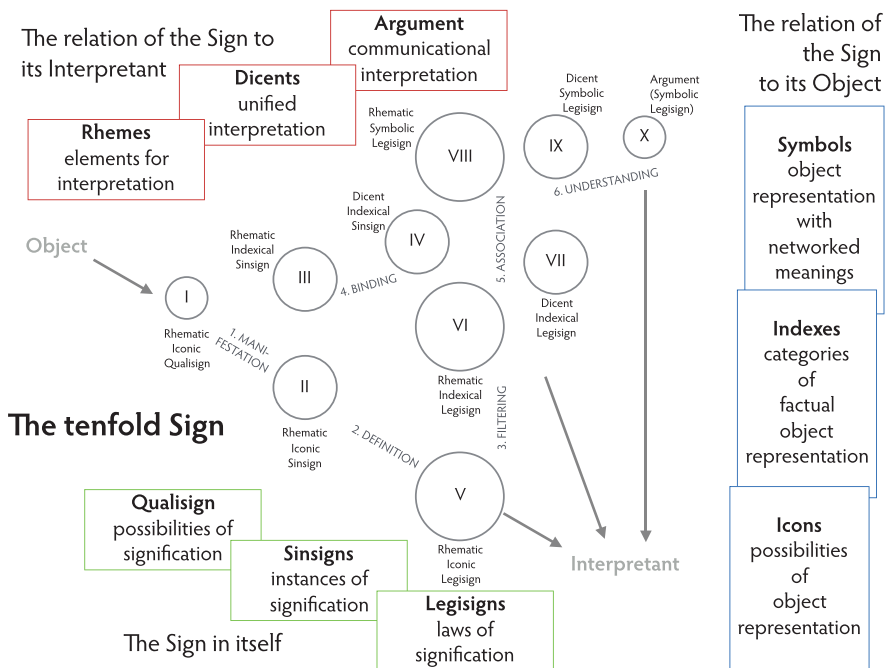


Fig. 6: The complex semiotic system of semiotic agent.

Among all the Objects of the world being represented, there is one kind that is exceptional: the organism itself as Object of the Sign. It appears there would be

some kind of dual processing going on. However, in closer analysis that distinction ends up being not only nebulous but lacking any true separation. Yet, this duality appears along the lines of endogenic and exogenic semiosis discussed in various ways by e.g. Thomas Sebeok (2001) and Jesper Hoffmeyer (1992), or even Eero Tarasti (2015: 66–69). In terms of the existential notions of *Soi* and *Moi*: on the one hand, we perceive and interpret Signs the Objects of which are whatever there is in the environment present to us, but, on the other, we perceive and interpret Signs whose (dynamical) Object is our own body, ourselves as organisms.

The latter appears somewhat different from the former in that the living body of the organism, embodying semiosis, is always present, constantly perceived, active in continuous processes of perception and action. The objects of the world are always present, by persistently exerting their brute force and hard facts upon us (due to causality). In regard to action, we are, on the one hand, capable of locomotion within the limits of our physique (and suitable tools). On the other hand, we are capable of causing changes in objects, their features, and in situations of the world, but in both cases, the hard facts of the causal world resist our will and effort (see CP 1.324, CP 1.375–1.384; Ojala 2009: 73, 252; Määttänen 1993). The interaction is ceaseless, and without going to more detailed analysis, it suffices to summarize this in Määttänen's (2015: 57–58) words:

Strictly speaking one cannot talk about interaction in terms of only the other party of this relation. The correct unit of analysis is the interactive system as a whole. In this sense mind extends outside the body. The objects of the environment belong to “the functional organization of mind”.

Through Symbols, through associating the Legisigns corresponding to the Sin-signs of particular situations of ourselves and the world, we constantly relate the interpretations of ourselves with our interpretations of other features and objects of the world, and thereby evaluate our being-in-the-world, our (beliefs of) well-being and survival, and interpret the situations through and into various, sometimes competing habits of action. This semiotic positioning of oneself in the world is the locus of *emotions*. To quote Peirce (CP 5.247), emotions are “relative to the particular circumstances and disposition of particular man [or woman, or other] at a particular time”, and this holds for “[e]very operation of the mind”.

Not only does the process of inquiry involve the constant evaluation of the relation of the Signs of *our bodies, ourselves* with those of other *Objects*: the evaluation encompasses the relation with other *subjects* of the world through their perceivable features, as well. In brief, emotions are our means

for inquiring into and negotiating our position in the world of our own and of the others, the socially shared world.

8 Tool usage, soft facts, and agency

Just as there is no actual distinction between the self and the world, there is no final, distinctive borderline between others and self. The development of social relations is rooted in the bodily, causal relations of Objects, and our perception and interpretation of them. As we grasp physical objects and study their features, properties, we learn them and we learn to use them (since the meaning of the object is the habit of action it ensues). Manifested habits of action have their consequences on the objects of action, and those ramifications of actions are there for us to perceive and interpret. Due to the causality of the actual objects, the ramifications of action upon objects are logical and consistent. At this point, the emerging subject functions as an *instrumental agent*. Using objects also has ramifications we may not at first know of – consequences that are either beneficial or not, and those consequences, again, we attach to the representation of the object. However, as we grow into representing the objects and situations more efficiently, we surpass mere trial-and-error cycles and develop habits of action that are about (more or less intentional) testing, examining, inquiring into the objects and the world. Children's play is a prime example of this. Even at rudimentary levels, objects – such as sound – can be used as tools, as means for achieving goals.

Think of a baby crying, for instance. A baby may use crying in order to achieve a state of affairs where a caregiver is present. John Dewey (LW 10:68) illustrated the pragmatic maxim through a baby's cry as an intrinsically expressive act (see also, e.g., Nakayama 2015; Winnicott [1960] 1982; Ojala 2009: 338):

At first a baby weeps, just as it turns its head to follow light; there is an inner urge but nothing to express. As the infant matures, he learns that particular acts effect different consequences, that, for example, he gets attention if he cries, and that smiling induces another definite response from those about him. He thus begins to be aware of the meaning of what he does. As he grasps the meaning of an act at first performed from sheer internal pressure, he becomes capable of acts of true expression.

In this case, the baby is an instrumental agent, producing sound in order to use it – intentionally or not, at first – as a Sign, as a tool to affect the caregiver's action, and their habits of action. The perception of the revealed outcomes of action upon objects is the basis of *tool usage*, of learning how to use tools, and

of learning the habits of learning tool usage. In Piaget's terms, these are concrete operations becoming abstract operations.

What we can do with inanimate objects is of course constrained by their physical properties and our abilities to manipulate them. Once we learn to manipulate or interact with an inanimate object in certain ways (i.e., develop the pertinent habits of action), we can more or less rely on those habits until we encounter an object of the same category with different properties that redefine the category, i.e., update or reform the relevant Legisigns, beliefs, and habits.

Animate objects, that is, other organisms and subjects (with the so-called "free will") are less predictable. Whereas we must comply with the *hard facts* of inanimate objects, other subjects may more or less comply with our actions: our and their *social facts are soft*. To quote Määtänen (2007: 458),

Social facts are also objective, but in a different way than hard facts. – –. From the Peircean point of view these soft facts exist as habits of social action, and from an individual's viewpoint the social practices and habits are perfectly objective. But there is still a difference. The objectivity of hard facts is the objectivity of physical bodies, but soft facts (social habits) are not physical bodies.

To this he adds (2007: 458) that: "As habits of action the soft facts are not only facts but also beliefs." In brief, the soft social facts are the beliefs, the habits of others, the outcome of their processes of signification. Hard facts of the actual objects in the world afford (enable and delimit) our actions, our agency in ways based on the features and causal relations of the objects. The social facts do the same, through the objects of the actual world (since there is no direct, immaterial connection from one mind to another), but in a soft way. That is, in social interaction we can negotiate the affordances and constraints, depending on our counterparts. For instance, the early stages of infancy are (hopefully always) protected by good-enough caretakers, so that, from the baby's viewpoint, they can sufficiently sustain their beliefs of *omnipotency*: the world as interpreted by them simply complies to their wishes.

As children develop representations of themselves as organisms, outcomes of their actions as contrasted to actions of others, and the various inconsistencies versus consistencies in interaction with not only objects but with other subjects (that is, mutually non-complying versus complying soft facts of interaction), a phase of a relative separation of self from others occurs. The last transition on the path of semiotic empowerment to agency is the *understanding* of the social interaction as communicative – a theory of mind. In that transition from the Dicot Legisign to the Argument, the difference between noncompliance of the hard facts of inanimate objects without semiotic agency and the relative negotiable compliance of the soft facts of other semiotic agents is revealed. That, in turn,

reveals the process of interaction, and semiosis itself becomes the Object of the Sign. In this respect, the Argument is indeed “a Sign which is understood to represent its Object in its character as Sign” (CP 2.252).

The continuing negotiation of the subject’s position in the socially shared world is similar to the notion of negotiating identity in various contexts throughout life, in the sense of Stuart Hall’s (1996) notion of postmodern subject. In education, the soft facts connect closely to Vygotsky’s (1978) notion of *zone of proximal development* and to *scaffolding*: optimally, the needs of learner are complied with, but only to the point that the learning situation affords successful action and the development of habit of action as an achievement from the learning situation. This applies both to formal and informal learning. Once the habit of action regarding the learning situation is formed, supporting the action is no longer needed, and the learner is capable of acting independently. Enabled by the communicative revelation of the Argument, this goes beyond claiming an actual space for action, to claiming a *semiotic space* by the subject: acquiring sets of possibilities of signifying encounters with others in the world, the afforded and constrained opportunities for acting and producing signs for self and for others to perceive and interpret, the full extent of *semiotic agency*.

The communicative revelation is also a step to joint action, including action coordinated towards joint goals, with matching meanings. For successful co-action, it is necessary to negotiate the tasks and roles between the agents. In learning that, that is, in the process of social growth, the soft facts mediate the bilateral and multilateral positions in each particular situation, and are, again, interpreted through the interplay of Sinsigns and Legisigns. Through the negotiations, the subject develops *an agency repertoire* for the joint action and social situations: a selection of habits of action, where the subject assumes subordinate, equal, or superordinate positions, with contextually varying degree of autonomy for action – regardless of whether the resulting power issues in social positions become explicit or remain implicit. Through inquiry, the semiotic system is self-regulatory, even in this respect.

9 Existence, mind, and inference

The semiotic model of agency is now quite complete. To recapitulate: in the process of inquiry, depicted by the semiotic triangle, the Sign of the Object is interpreted, producing the habits of action. The tenfold model of the Sign covers the stages and transitions of semiosis from the potential of the Qualisign to the communicative understanding of the Argument. The law-like character of

Legisigns overcomes the temporal volatility of particular Sinsigns, and enables the continuity of semiosis and inquiry. Through semiosis, we are able to more or less anticipate and predict future situations. From this perspective, it is appropriate to understand ‘mind’ as the competence or ability of predicting and guiding organisms’ action in the world, as based on the developed representations thereof, i.e., habits (cf. Colapietro 1989: 110; Ojala 2009: 13).

We negotiate habits for social action, identities and our positions in semiotic space through soft facts. We form beliefs of ourselves and others as more or less similar subjects, as members of social groups, as representatives of cultures. In the process, we also negotiate our positions within social networks and thereby shape our identities, which still, from the Peircean viewpoint, are the conglomeration of Legisigns, the accumulated experience, our habits of action. As inquiry continues, our representation of the world becomes (presumably) more precise (I dare say more truthful), and we become better prepared to *be*, *act* and *exist* in the world. In other words, as we grow, we become empowered from sensorimotor agency to instrumental agency, and further to semiotic agency. (This is the optimistic view.)

The world we inhabit constantly changes. Our habits are based on experiencing the world as it has been present to us, which is bounded within the qualitatively and quantitatively limited situations we encounter. They are constrained by our imperfect abilities to perceive and interpret situations. (This puts the optimistic view into a more realistic perspective.) In developing our agency, do we just have to wait until we are exposed to particular situations of the world, to be able to gain experience and develop habits regarding the objects, others, and situations of the world *as they may be* in the future? If action is *deduced* from developed habits of action, and habits, in turn, are produced by interpretation in semiosis – in *induction* from percepts, where does new knowledge lie, beyond merely adapting to the *status quo*? The answer to this question resides in the notion of *abduction*, hypothetical inference. According to Peirce, whereas “induction does nothing but determine a value, and deduction merely evolves the necessary consequences of a pure hypothesis”, “[a]bduction is the process of forming an explanatory hypothesis”, “the only logical operation which introduces any new idea” (CP 5.171; see also CP 2.270, CP 5.145, CP 5.603, CP 5.172; Paavola 2006).

Hypotheses, of course, are well-known to researchers in certain research methodologies (and perhaps from Peirce’s theory of perceptual judgment). However, there are also more common – perhaps more important forms of abduction. Children’s play was already mentioned: the make-believe, the imaginative aspects of it are abductive inquiry into *possible* situations of the world.

Other forms of *transcending the actual world* and creating virtual worlds can be found in music and other arts.

10 A glimpse of agency and music

Given the scope of this article, it is both impossible and unnecessary to truly delve into agency from the viewpoint of music and the arts. However, there are two matters worth considering. The first one is about musical agency. At least in the Western World, and evidently increasingly elsewhere as well, the agentive access to the virtual worlds of music is limited. Music is ubiquitous, and the majority of people listen to music (in singular), but what musics (in plural) are accessible may severely depend on, or even be dictated by the commercially-oriented mechanisms of music and media industry. Music industry, per se, is not necessarily evil, but there is a problem with its limited agency: we live an age of *consumer culture* in music, rather than *participatory culture*, where each member of society would, in principle, have equal agency in *producing, performing, and creating* the kind of virtual worlds they themselves find meaningful to explore and enjoy. While this by no means excludes or diminishes the value of expertise in music, musical agency is not *democratic*, although it might need to be: should not each individual have equal access to the semiotic space for semiotic agency, as a matter of equal opportunities? That is something the field of music education is actively working on, globally, education being the path to empowering individuals and societies into agency. (On practical terms, this means, among other things, increased role of composing in Western music education.)

The second point is about agency in music: How does music mean? How does the praxis of the virtual worlds of music come into being, so that they produce experiences in others to the point that music is ubiquitous? There is no unresolvable mystery, although more research is needed. Much has already been done, by researchers such as Márta Grabócz, Joan Grimalt, Robert Hatten, Jean-Marie Jacono, the late Raymond Monelle, Eero Tarasti, and many more in the International Musical Signification Project.

In that context, I suggested an approach that incorporates cognitive metaphor theory into musical semiosis (e.g. Ojala 2009). In music, the perceptual features of sound (as dynamical Object) are detached from their origin (we do not listen to sound as per identifying their source). Once so liberated for interpretation, we use a variety of quality dimensions (such as timbre, dynamics, rhythm, pitch, melody, harmony etc.) combined together to form temporally evolving

complex sound objects and situations, acts, and events (see Tarasti 1998). Perhaps due to anthropocentric empathy, these acoustic situations get listened to as virtual situations, as articulations of narratives, that is, as metaphors of unfolding situations, acts and events corresponding to those in the accumulated experience of ourselves or other subjects. We hear Signs of ourselves and others in the virtual situations of music. The virtual situations are perceived similarly enough to the perceived situations of the actual world to constitute meaningful experience. However, the landscape, the *virtual space* created by the metaphorical action in music does not consist of hard facts in the sense that the virtual world or its virtual subjects could actually become broken or hurt (albeit sound is an actual, physical, causal phenomenon). In this sense, music serves as a laboratory, it is a playground, it is a world of make-believe, a world of hypotheses and abduction that goes beyond the semiosis in the regular actual world. By living through the musical narratives (broadly taken), we may gain virtual experiences of acts, events, situations that do not necessarily have direct counterparts in the actual world – or deal with the aspects of the actual world safely, since music is unbreakable and can be created anew, adjusted to produce the wanted experience, again and again. This makes agency in music an efficient tool for further inquiry and semiotic empowerment. Similar can by all means be said about other arts.

11 To conclude

This has been a rough outline of the development of agency from the point of view of Peirce's semiotics and pragmatism. I did not go into details or even examples, apart from the brief consideration of music. I did not deal with the spatiality and temporality of semiosis in detail, nor with cognitive metaphors, conceptual spaces, or conceptual blending, nor with the embodiment in its five tiers. These all are topics and theories underlying this text, but beyond the scope here. There is much to be done, e.g., in drawing together research on embodied cognition and thought-signs, which is where Peirce's semiotics focusses on, but is not limited to. I placed emphasis on Peirce's notion of the tenfold Sign and the six transitions between the ten classes in order to convey systematically how agency develops from mere reaction to object representation and further to self-aware and self-regulated activity, ramifications of which are understood. I hope the approach also illustrates how semiotics may serve as a solidifying theory in this kind of topic cluster – agency, growth and meaning – which encompasses a variety of research disciplines. From this Peircean perspective,

the development of agency can well be understood as a problem of semiotic empowerment.

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