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The embodiment of language: sign function and semiotic threshold

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Abstract In the last decades a deep revision of Saussure's conception of language has shed some new light on the nature of language and its *double essence*, confirming the inadequacy of the 'dichotomies' by which his theory has been vulgarized, especially out of Europe. In a renewed Saussurean philosophy of language, Saussurism is no longer ascribable to an extreme culturalism, nor probably is Structuralism. Indeed, if one rethinks the dialectic between the *faculté du langage*, the *langue* and the *parole*, and then refocuses the notion of sign function and of semiotic threshold, Saussure's theory and its structuralist implications could as well suggest a non-reductionist perspective that could even venture to enhance the current theories of Embodied Cognition. This paper outlines some routes by which a profitable dialogue could be opened.

Keywords: Embodied Cognition, Enactivism, Semiotic Threshold, Sign function

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0. Introduction

As is well known, Saussurean *vulgata* has assumed a sharp distinction between nature and culture, giving priority to the second over the first. That the *langue* – the subject matter of linguistics – is defined in the *Cours de linguistique générale* (1916) as a radically arbitrary system of signs seemed to imply a strong culturalist perspective, highlighting the historical and social nature of the sign and its 'autonomy' from the referent and even from the speaker, and then overshadowing its natural fundament. The exegesis of the last decade seems, on the other hand, to open a new perspective on the intrinsic *linguisticity* of human nature (Fadda 2011: 18), in which the intimate relation between the faculty of language and historical languages appears much farther from anti-naturalistic conclusions and much more compatible with a neo-culturalist approach.

According to Gambarara (2012), Saussure clearly distinguished two senses of 'natural', the first concerning the faculty of language as a natural instinct, the second regarding the *langue* as the instrument that accomplishes it. If Gambarara is correct, Saussure developed an original conception of the *instrumentality* of language in which what is natural is the fundament as well as the complement of what is cultural: *langue* is a necessary and historical instrument needing a permanent *organ* to work. In this respect, the notion of *esprit collectif* anticipates a neo-culturalist approach whose main aim is to avoid any risk of biological and/or psychological reductionism (Gambarara 2011: 34). A Saussurean neo-culturalism could, then, be the point of convergence against the

reductionist tenets both of standard cognitive science and of embodied cognition (EC) theories.
Indeed, philosophers and semioticians have already opened a profitable dialogue between semiotics and cognitive science, discussing some of the basic assumptions of classical cognitivism as well as of EC theories. Following these attempts, my aim is not to make a trivial critique of EC theories in the light of a presumed Saussurean or structuralist neo-culturalism, but rather to propose an integration of the two approaches, using their complementarity to shed some light on the nature both of language and of historical languages.
From this perspective, the notions of sign function and of semiotic threshold appear decisive for explaining the continuity between nature and culture – i.e. between body and language – but also the discontinuity between the two poles implied in language as a symbolic activity.
A careful analysis of the classical notion of sign as *something that stands for something else* (*aliquid stat pro aliquo*) suggests that a sign is both natural, having a biological and physical grounding, and cultural, establishing a not-natural and not-necessary relation between two elements that stand together (for someone, in some circumstances). Seen in this light, a semiotic theory, which is 'cognitive' in itself, cannot deal with conceptualization alone, but has to explain the relations between the *form* and the *substance* and the consequent hinge connecting material and formal arbitrariness (De Mauro 1982).
In the first section I will discuss the main assumptions of EC theories against standard cognitive science (SCS), suggesting that both hinder the development of a semiotic theory – which could not be anything but a theory of cognition and of communication.
In the second I will outline some contradictory aspects of the notion of *languaging* as defined in the enactivist approach, while in the last two I will propose a rethinking of the notion of sign function and of semiotic threshold, which could be useful for circumscribing the too-vague notion of embodiment, in the belief that, although quite 'imperialistic' (to misquote Umberto Eco) in the current theories of cognition, this concept could become theoretically meaningful only on the basis of a clear distinction between what is embodied and what is not.

1. Standard Cognitive Science *vs* Embodied Cognition

A computational-representational understanding of mind is still considered the most theoretically and experimentally successful approach to mind ever developed (cf. Thagard 2005). Although there is much disagreement about their nature, mental representations, the subject matter of SCS, are broadly defined as sequences of symbols syntactically manipulated by a processing unit. Semantics is secondary (or even external) to the syntactic mechanism, and the substance of the body-hardware is felt to be irrelevant for the functioning of the mind-software.
As is well known, the mind-computer metaphor stands on that Cartesian dualism which was assumed by Chomsky as a firm basis for cognitivism. In his view, cognition takes place prominently in the brain/mind. The relations between the body as it is, the brain/mind and the social or cultural background are excluded from the theory of cognition, and attention is exclusively focused on the innate internal faculties, among which language plays a central role in defining the singularity of human nature (cf. Chomsky 2000).
Dualism, cerebrocentrism, internalism and individualism remain substantially unmodified even when SCS faces the test of evolutionism and biologism. The distinction between the *Faculty of Language in the Broad sense* (FLB) and the *Faculty of Language in the Narrow sense* (FLN) is, in fact, the last attempt to save the theoretical

framework of the first cognitive revolution. The FLB, probably shared with some other animals, includes a sensory-motor system, a conceptual-intentional system, and the computational mechanisms for recursion, providing the capacity to generate an infinite range of expressions from a finite set of elements (*rule-governed creativity*), while the FLN coincides with recursion alone, the so-called *Merge*, the uniquely human component of the faculty of language (Hauser, Chomsky and Fitch 2002: 1569).

In contrast to these tenets, which combine *Descartes's error* with *Plato's problem*[1], EC theories declare that the material support, the body, is not neutral, but deeply influences, or even determines, the functioning of cognitive processes.

Given the vagueness and the heterogeneity of the theoretical premises of this perspective, 'embodiment' has become a *Modewort* employed in different approaches, even in those maintaining SCS's assumptions.

Since the formulation of the conceptual theory of metaphor and of the subsequent *experiential-realism hypothesis* (Lakoff and Johnson 1980), and particularly after the publication of *The Embodied Mind*, the groundbreaking book by Valera, Thompson and Rosch (1991), the adjective 'embodied' has been attributed to different theories as well as to different properties of cognition. To clarify and delineate the senses of this 'imperialistic' attribute, Shapiro (2011: 4-5) highlights three main constant themes of EC theories, clarifying, however, that they never flow into a unified and coherent paradigm.

Actually, the very broad theme of EC theories is *conceptualization*: «the concepts on which an organism relies to understand its surrounding world depend on the kind of body that it has, so that were organisms to differ with respect to their bodies, they would differ as well in how they understand the world» (*Ibidem*). This is the focus of Valera, Thompson and Rosch's proposal in so far as they challenge the faith in an 'objective reality' against which concepts simply code the inherent properties of things. Their account is, instead, based on the idea that conceptualization lies on the physical structure of the organism that makes the thinking. Although this new perspective appeared to overturn the main tenets of SCS, it is not so revolutionary as it seems. The idea that conceptualization is constrained by the cognizer's physical structure is implied even by the strongest culturalist theories, which normally rest on the distinction between a material and a formal arbitrariness, the first imposing genetic, biological and physical constraints to the (theoretical) boundlessness of the second.

The second theme pinpointed by Shapiro is *replacement*: «an organism's body in interaction with its environment replaces the need for representational processes thought to have been at the core of cognition» (*Ibidem*). That cognition «can take place in systems that do not include representational states, and can be explained without appeal to computational processes or representational states» (*Ibidem*) makes the notion of embodiment more pregnant, rejecting both computationalism and representationalism. In short, these theorists refuse the principle of dualism, since individuals do not have the necessity to build mental representation, given a *structural coupling* between organism and environment. Recalling phenomenology's main assumptions – in particular Merleau-Ponty's insights – the key of knowledge is then placed in the *participative interaction* between individuals of flesh and blood and the environment (Gibbs 2005: 16).

The third recurrent theme of EC theories is *constitution*: «the locus of perceptual experience is not, as might ordinarily be thought, the brain, but is instead spread out

[1]«The Platonic and Cartesian solutions provide an unambiguous answer: we must look within us, within our minds, to explain the outside that constitutes a reflection or a 'reminiscence'. In philosophy of mind, this solution today is called 'Internalism' and is based on an implicit mind-body distinction» (Pennisi and Falzone 2016: 42).

across cycles of organism-world interactions» (Shapiro 2011: 65). Theorists who insist on this principle disapprove the hypothesis of a *brain-bound* cognition, typical of SCS as well as of weaker EC approaches[2].

An intersection of the three themes gives birth to the different meanings of 'embodiment', more or less compatible with the SCS. In fact, the broad idea of the interaction between mind, brain/body and environment and the subsequent belief that cognition depends *also* on the characteristics of the body and on its relations with the outer world do not explicitly deny a computational conception of cognition, nor reject the existence of (some kind of) mental representations. In this respect, one may agree with Shapiro (2011: 93) when he argues that SCS could easily include in its mind's programs these bits of information: «if properties of the body do indeed "shape" how we experience the world, then the standard cognitive scientist should insist that the relevant properties of the body be represented in the algorithms that constitute cognition». As a result, SCS would have failed because it did not include in the mind's programs this additional information, not because of the inadequacy of its overall computational framework.

At any rate, the three themes converge in the perspective of Enactivism, fueling arguments against both SCS and the weakest EC perspectives.

Enactivism follows in the wake of Varela, Thompson and Rosch's proposal to «negotiate a middle path between the Scylla of cognition as recovery of a pregiven outer world (realism), and the Charybdis of cognition as the projection of a pregiven world (idealism)» (Varela, Thompson, Rosch 1991: 172). Cognition is *enactive* because human beings build their world on a history of *structural couplings* between the inner world and the environment. From a phylogenetic point of view, these couplings allow humans to create a world; from an ontogenetic point of view, they allow participation in the world created, given that individual and the world are mutually specifying.

Regrettably, even the attribute 'enactive' has quickly become a vague label. In order to delimit their approach and to specify the tenets of the various EC approaches, Hutto and Myin (2017) distinguished between *Ultra Conservative* (Ultra-CEC), *Conservative Enactive Embodied* (CEC) and *Radically Enactive Embodied* (REC) accounts of cognition.

Ultra-CEC theories place the E-factors behind and before cognitive activity, saving its *brainbound*, computational and representational nature. CEC theories advocate, instead, an intermediate hypothesis, broadly admitting that the E-factors are constitutive of cognition. Both these approaches remain, however, in the SCS by supporting a computational and representational account of cognition. On the other hand, REC or EEC (*Enactivist Embodied Cognition*) accounts reject these tenets, defining cognitive activity as embodied in a more radical sense.

An analogous classification proposed by Gallagher (2017: 43) identifies two distinctive features of SCS: conceptual content and mental representation. Weak EC theories imply both the features, while enactivist theories deny both of them. In short, enactivist theories do not accept the idea of a *Content Involving account of Cognition* (CIC), stating that (a large sphere of) cognition does not involve contents, nor requires representations. But, by this point, to properly understand the enactivist account it is necessary to clarify what 'content' and 'representation' mean precisely.

[2] In line with Shapiro's perplexities – cf. for instance the clarion distinction between *causation* and *constitution* – Pennisi states that cognitive science is still consistent with cerebrocentrism, to which he opposes a pragmatic perspective where «action is not interpreted only as a relationship between the subject and the environment (enacted cognition) or as a direct product of the environment (extended cognition) but as the set of body-based cognitive ability. In short, this is one way to overcome cerebrocentrism without falling into any form of neo-behaviourism» (Pennisi and Falzone 2016: 176).

2. From a mind too full to a mind too empty

Second generation cognitive semantics shapes up to be a theory of categorization and conceptualization. As such, the notion of (linguistic) meaning overlaps with those of content and of concept. Both the first and second-generation cognitive science fail to conceive semantics as a matter of language, considering it rather a matter of thought or even of brain (Lakoff and Johnson 1999; Lakoff 2008). Paradoxically, cognitive semantics could even do without languages, which are thought to be only the tip of the iceberg of their real subject matter, namely conceptual structure. Even though EC theories challenge Cartesian-Chomskian dualism, they still do not deal with languages as semiotic systems. In fact, if on the one hand the non-autonomous conception of language allows us to disprove the hypothesis of the modularity of the mind and of language and to dismantle the Chomskian framework, on the other language is still investigated as one mental faculty among the others, and languages are seen, in the best case, as the glasses through which conceptual structures can be observed and analyzed. In short, the focus of cognitive semantics research remains all that happens in the mind/brain *before* the concrete semiotic and linguistic activity, considering communication as the natural consequence of the conceptual structuring of the world.

To some extent, enactivism seem to follow the same trend, as it insists on the non-autonomy of cognition, and on its not being internal, individual, computational, brain-bound and so forth, but still rule out a specific function of languages, underestimating their being socio-cultural conventions.

The broad idea that meaning *emerges* from the *hic et nunc* cognitive activity is thought to disprove the existence of a pre-given representational map or of a predetermined model of the world. Such a *radical embodiment* affects, then, not only perceptual or sensorimotor activity, as even a weak embodied perspective admits, but the whole of cognitive activity, including language.

Nonetheless, the rejection of the notion of representation at all cognitive levels, and the critiques of the equivalency intentional-representational, imply a puzzling conclusion: namely, that mental states can have intentional, but not representational content. But if this could be true of perceptual or sensorimotor states, which presuppose an almost *empty* brain, and a mind *emerging in action* and *distributed* between the body and the environment, as the theories of the extended mind also suggest (cf. Logan 2007), to apply the same principle to the entire sphere of cognition and to language is to suppose a mind without concepts-signs.

Upon closer inspection, an enactivist approach could be accepted only if the rejected notion of representation is that of SCS, thus saving at very least the sign function. In the same vein, the notion of content cannot be completely eliminated, unless one intends it exclusively in propositional or truth-values terms.

However, since the history of linguistic thought has largely shown that representationalism does not necessarily imply computationalism, and that the notion of content is not necessarily propositional, one gets the impression that the weakest EC theories, although they leave several aspects unexplained, have been correctly levelled against Chomsky to deny the computational functioning of cognition, and against the analytic and the linguistic currents of the philosophy of language of the 20th century to downplay the autonomous conceptions of meaning. Otherwise, enactivism has perhaps gone too far, uncritically rejecting the notions of mental representation and of content.

Moreover, a great deal of cognitive research – from earlier prototype theories to the pragmatic approaches to categorization – have discarded a monolithic conception of category and a definition of the "concept of concept" in static terms. If in the so-called "classical theory of categorization" concepts and categories were supposed to be

defined as sets of elements sharing necessary and sufficient features, it is now self-evident that categorization involves different cognitive processes from pre-conceptual structures like *image-schemata* (Johnson 1987), *mimetic-schemas* (Zlatev 2005) to metaphor and frames (Lakoff and Johnson 1980, Fillmore 1985), and does not work in the *vacuum* (off line), but according to specific tasks in specific contexts (on line). Hence, since the idea that a basic cognition is not yet representational is largely shared in cognitive semantics as well as in cognitive semiotics, the impression is that enactivism overextends the functions of the *basic mind*, restricting or even eliminating the sphere of symbolic cognition, which cannot help but be representational and contentful.

Likewise, when moving from language to perception the fascinating idea that cognition is not driven by pre-given conceptual structures confuses and overlaps phylogenetic and ontogenetic explanations. In facts, from a phylogenetic perspective it is quite undisputed that «acquiring the capacity for cognition that involves content is a special achievement» (Hutto and Myin 2017: 56). Unless one accepts Chomsky's or other anti-evolutionistic hypotheses, language must have *emerged* as species-specific innovation from hominid cognitive processes probably common to different animals (cf., among many others, Donald 1991, Deacon 1997, Logan 2007, Tomasello 2019). Nevertheless, from an ontogenetic perspective, individuals do not start again from the beginning coining a sign each time it is needed. If that were the case, we would run the risk of falling into Wittgenstein's private language given the absence of a set of public norms functioning as a magnetic compass to orient the processes of the attribution of meaning.

Human beings cannot count only on contextual indexes to determine the sense of an utterance, since they are normally embedded in different semiotic systems already in use in their community which *fix* linguistic norms – or the *value* in the Saussurean sense. Meanwhile, the enactivist account overtly avoids explaining the threshold from pre-conceptual to symbolic cognition[3].

The conviction that individuals *reach* language only when already able to master «very special kinds of scaffolded practices – practices involving public norms for the use of symbols, where such norms depend for their existence on a range of customs and institutions» (Hutto and Myin 2017: 56) suggests that they already need language to *reach* language. Accordingly, the very general assumption that social dynamics do not need pre-given symbolic systems is highly contradicted by the obvious fact that such practices do already involve some kind of semiotic production. It should then be necessary to distinguish the sign functions from other types of semantic experiences.

In this respect, recalling Husserl's notion of representation («something which is *directly present* but not *thematic* refers to something which is *indirectly present* but *thematic*») and Piaget's concept of differentiation («there is a *differentiation* between expression and content in the double sense, I take it, that they *do not go over into each other in time and/or space*, and that they are perceived to be of *different nature*»), Sonesson (2007: 93) suggests a criterion to distinguish signs from other semantic experiences. His proposal is in line with my aim of discussing the enactivist accounts of cognition starting from the conviction that the sing function is the very *discrimen* between historical languages and the other human and non-human modalities of semantic production.

[3]According to Logan, the *emergence* of language is due to the transition from percept-based to concept-based thinking, a passage that entailed three major breakthroughs in hominid cognition: 1) tool-making and tool use, 2) social organization and 3) preverbal communication. These breakthroughs have been a sort of «cognitive laboratory in which the skills of generativity, representation, and communication developed» (2007: 5).

3. Language without signs?

According to Cuffari, Di Paolo and De Jaegher (2015), *sense making – signification* in semiotic terms – is a cognitive activity distributed in the environment; it is a dynamic and pragmatic process not depending on the inherent properties of things, happening each time that an agent *gives sense* to the phenomena experienced. Sense making, as such, does not imply that what is perceived or experienced is *translated into* a mental representation.

The activity of language (*languaging*) lies in the necessity of establishing social practices; it is an autopoietic system, a *cognogenetic experience*. In Bottineau's words «experiencing the sensorimotor coupling of voicing and hearing is instrumental in the construction of thinking at every level of the experience – intimate, private or public, and this is what the enactive paradigm has to bring in beyond the traditional embodiment described by the symbolic cognitivist paradigm» (Bottineau 2010: 277).

Yet it seems that the definition of languaging is highly contradictory, even between the two accounts just quoted. On the one hand, it is defined as the act of speech or *parole* (without *langue*)[4]; on the other it is supposed to embrace the whole linguistic experience as *content involving* but not (necessarily) *content-based*. But if languaging does not require mental representations, then human beings could *perform* a speech act without mental expression-content couples to retrieve when needed.

This puzzling view is probably entailed in the *wheel of languaging*: «the human style of participatory sense-making becomes increasingly linguistic» as far as «we develop sensitivities to certain acts and strategies of coping, and we incorporate the coping practices until they become constitutive of our way of being in the world» (Cuffari, Di Paolo and De Jaegher 2015: 1092). This evolutionary process brings us to «articulate novel concepts of *linguistic sensitivities and powers and linguistic bodies* to capture the radical embodiment of languaging as an idiosyncratically incorporated style of participatory sense-making» (*Ibidem*).

Actually, one may agree that symbolization is a «graded, emergent phenomenon of iterated interaction coordinations» (*Ivi*: 1010), without denying that the experience of language needs the establishment of a conventional system of sign functions. In face of this evidence the authors contradict themselves by affirming that languaging is a very particular form of sense making, given that «through coordinated and exploratory navigations between individual and interactive sense-makings, social creatures generate *recursive and replicable behavioral-organizational conventions*». This causes a «*dialectical unpacking* [which] guides us to a specific determination of what makes certain forms of sense-making count as languaging» (*Ibidem*).

How to understand, then, this *dialectical unpacking* if not as a *bifurcation*[5] between a broader sense-making and *languaging* as a particular, conventional, sense-making activity? The *unpacking* should indeed suppose not only that human beings have other kinds of semantic experiences before reaching language, but also that language should be a new and different semantic experience. Indeed, Bottineau (2010: 297) gets the argument: namely, that «one may hypothesize that for one given individual, the change was not gradual: either one did not vocalize, and used zero words, or one did, and tokenized as many experiences as appeared relevant in real life».

[4] «Languaging (the act of speech) is understood here as an intimate, private, or public sensorimotor process, la *parole*, enabling all participants to construct some form of mental event or scene» (Bottineau 2010: 278).

[5]«Spoken language and abstract conceptual thinking emerged at exactly the same time as the bifurcation from the concrete percept-based thinking of prelingual hominids to conceptual-based spoken language and thinking» (Logan 2007: 50-51).

In this light, the notion of *languaging* simply recalls the old idea of language as *Energeia* as well the conception of language as a bodily technology[6], corroborating a rift which has opened in SCS and which has recently led to the plain conclusion that «before being a powerful system for communication and cognitive representation of knowledge, human language is *a species-specific bodily technology* applied to symbolic needs» (Pennisi and Falzone 2016: 96). Therefore, the rejection of the dichotomy between a basic and a high-order or an off-line and an on line cognitive activity (or between a not-yet-symbolic and a symbolic thought) opens a contradiction in the radical embodied approaches when they come to deny the *otherness* of the sign from reality[7]. In its essence, linguistic experience implies a sign function, since «when the sign, whether it is a stretch of discourse, a picture, or an animal track, is present along with the referent, however, the signified allows us to refocus the referent, in other words, to present it in a particular perspective» (Sonesson 2007: 97). For this reason «the sign requires independence: that is so say, a "body" of its own» (*Ibidem*).

4. The sign and its thresholds

In EC theories no concern at all is shown about the sign function as a specific modality of semantic production. Otherwise, as is known, in the light of the foundational works of Peirce and Saussure, Eco (1976: 16) defines a sign as «*everything* that, on the grounds of a previously established social convention, can be taken as *something standing for something else*», «and the process which leads the interpreter from x to y is of an inferential nature» (Eco 1984: 2).

Since «properly speaking there are not signs, but only sign-functions», he argues that «A sign-function arises when an expression is correlated to a content, both the correlated elements being the functives of such a correlation», or in other terms «a sign is always an element of an *expression plane* conventionally correlated to one (or several) elements of a *content plane*» (Eco 1976: 48). This implies that «a) *a sign is nor a physical entity*, the physical entity being at most the concrete occurrence of the expressive pertinent element; b) *a sign is not a fixed semiotic entity* but rather the meeting ground for independent elements» (*Ivi*: 49).

Recalling Peirce, Eco distinguishes *semiosis* as a phenomenon, or an *action*, which involves a sign, its object and its interpretant, from *semiotics*, that is a theoretical discourse on semiosic phenomena. As a theoretical discourse, «a project for a general semiotics will encounter some boundaries or thresholds. Some of these must be posited by a purely transitory agreement [political boundaries], others are determined by the very object of the discipline [natural boundaries]» (*Ivi*: 5).

Notably, natural boundaries are «those beyond which a semiotic approach cannot go; for there is non-semiotic territory since there are phenomena that cannot be taken as sign-functions» (*Ibidem*). As a result, a threshold separates signs from non-signs: «For since everything can be understood as a sign if and only if there exists a convention which allows it to stand for something else, and since some behavioral responses are not elicited by convention, stimuli cannot be regarded as signs» (*Ivi*: 19).

Leaving aside the theoretical implications of the definition of sign function which Eco further discusses, for my present purpose the key point is the process that establishes

[6]Francesco La Mantia acutely discussed this point in his talk at the International Conference "Embodied Creativity: the role of performativity" (Bologna, 24-26 June 2019).

[7]According to de Bruin and Kästner (2012), «the challenge for enactivism» is «to bridge this "cognitive gap", and provide us with a convincing account of offline social cognitive capacities». In other terms, «the enactivist has to tell a story about how offline (i.e. decoupled) social cognition is grounded in and emerges from online (i.e. coupled) interaction», but insofar not even the recall of the notion of "narrative practice" takes up the challenge» (de Bruin and de Haan 2012: 234).

sign functions. In Eco's words, semiotics deals with «the whole of human activity», outlining the *formativity* of the semiosic process, given that the ability to produce and to interpret signs, and to draw inferences «represent a way to give form to our experience» (Eco 1984: 13). To some extent, it is by the symbolic activity that «man organizes his own experience into a system of contents conveyed by an expression system». Thus, a symbolic competence is the essential pre-requisite for conceptualization and categorization as well as for communication (*Ivi*: 134; cf. Deacon 1997). In this sense, «human beings may reach for the dynamical objects beyond the immediate ones», so «to transform Nature into Culture» (Sonesson 2007: 107).
Accordingly, Eco (1976: 23) excludes the possibility that the occasional use of an object standing for something else can have a sign function, given that «this represents no more than a signification system and does not imply an actual process of communication». Nevertheless, «once society exists every function is automatically transformed into a sign of that function. This is possible once culture exists. But culture exists only because this is possible» (*Ivi*: 24). Here we come back to the Saussurean conception of the natural as a fundament as well as a complement of the cultural.
In this respect, Bottineau (2010: 298) fits well into a semiotic perspective insofar as he defines the peculiarity of human language («languaging alters the environment and accretes the selves into a cultural body that self-defines itself as one of the living species – mankind») and the relational nature of the sign («the symbolical denial of this unity stems from the failure to acknowledge that a signifier is not exclusively physical, just as a concept is not purely mental, and that none of them control the other in a one-way relation»), but, at this point, it is difficult to grasp the theoretical originality of an inactivist theory of language.

5. What can be embodied and what can not

According to Saussure the relation between a signifier and a signified is established in the mind of the subject: the sign is a psychic entity (probably Saussure had willingly admitted that it is also embodied) whose roots are well planted in the linguistic system, itself in turn created and kept alive by the collectivity.
If it is generally true that structuralism «has never considered intercepting the binding relationship between the physiological structure and linguistic cognition in all of its forms», this does not imply the principle that «language structures, in so far as they are "semiotic", like all other conventional structures, are nothing more than self-sufficient cultural systems that can only be described and never explained» (Pennisi and Falzone 2016: 90-91). Different trends of structuralism (which should be spoken of in the plural, cf. De Palo 2016) are consistent with a cognitive as well as a pragmatic turn, emphasizing the dialectic between *langue* and *parole* and largely converging on phenomenological issues[8]. One could, then, consider these openings as the meeting ground with EC theories, fostering the overcoming of the theoretical impasses of both.
After all, if there are few doubts that language as a faculty is *embodied*, *embedded*, *enactive*, *extended* and so forth, and if the preconceptual operations highlighted by the EC theories – *relevance, organization, configuration, filtering* – are surely essential for the evolution of the faculty of language, they alone do not constitute language as a social convention. Conventionality and normativity are instead inherent properties of language (Itkonen 2008) intended as «*a consciously supervised, conventional representational system for communicative action and thought*» (Zlatev 2007: 307). But if it has the property of systematicity, of

[8]The relation between structuralism and phenomenology has been carried out by De Palo (2010, 2016).

representationality and of conventionality, which implies normativity and consciousness accessibility, then «language can not be embodied».[9]

6. Conclusion: Something to be afraid of

The *aporetic condition* of the sciences of language, and more precisely of semantics (De Mauro 1982: 157), is the reason why the notion of sign – «the instrument through which the subject is continuously made and unmade» (Eco 1984: 45) – must be constantly interrogated, implying as well that the thresholds could be constantly revised.
Eco (1984) specifically refers to the problem I have tried to illuminate: since a semiotic process is always triadic, it is possible to see A as the sign of B on the grounds of a third element C, that is «the code, or the process of interpretation implemented through the recourse to the Code» (*Ivi*: 9). Yet, the question is whether a triadic process is «characterized by the unpredictability of its C space or by the simple and dramatic existence of a space» (*Ibidem*).
Lowering the threshold, says Eco, would mean taking the way that Giorgio Prodi[10] has followed, by supposing that a semiosic phenomenon exists as C space as such, independently of its complexity and unpredictability – thus supposing an elementary mechanism in biological processes from which semiosis arises. However, «what remains to be clarified is whether the width and the unpredictability of a C space represents or not the threshold between high and lower biological processes – or if the complexity of the C space is only another 'optical' effect due to the limits of our knowledge» (*Ivi*: 15). Actually, «such a question concerns the dramatic problem of the boundaries between Spirit and Matter, Culture and Nature» (*Ibidem*). And here Eco stops, growing suddenly afraid.

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[9] Following Zlatev (2007: 300), «since language is not just a "module" of the human mind – something that Cognitive Linguistics emphasizes – but largely constitutive of it […], then the human mind cannot be embodied either».
[10] Dialoguing with Eco, Prodi argued that «it is not possible to establish, a priori, a semiotic threshold. The field must be completely open towards the origins, and always remain indeterminate» (Cimatti 2018: 2).

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