

Cognitive Semiotics*

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Summary. This paper offers a broad overview of Italian cognitive semiotics from its origin, in 1988, to its latest developments. Starting from Eco's novel *The Island of the Day Before* (Eco 1994), the paper tries to delineate a coherent path of the discipline by keeping track of its most fundamental stages: the encounter with cognitive semantics, the reflections on the experiential dimension of meaning, the problems and possibilities offered by the theories of embodiment, and the dialogue with 4E Cognition. In this journey, particular attention is offered to the way in which the relationship between semiosis and perception has been articulated from *Kant and the Platypus* (Eco 1997) to *Cognitive Semiotics* (Paolucci 2021).

Keywords. Cognitive semiotics, semiotics of perception, meaning and experience, 4E Cognition, Italian semiotics

Zusammenfassung. Dieser Beitrag bietet einen umfassenden Überblick über die italienische kognitive Semiotik von ihren Anfängen im Jahr 1988 bis zu ihren jüngsten Entwicklungen. Ausgehend von Ecos bahnbrechendem Werk *The Island of the Day Before* [Die Insel des vorigen Tages] (Eco 1994), versucht dieser Artikel einen kohärenten Weg der Disziplin zu skizzieren, indem ihre wichtigsten Etappen nachgezeichnet werden: die Begegnung mit der kognitiven Semantik, die Überlegungen zur Erlebnisdimension von Bedeutung, die Probleme und Möglichkeiten, die die Theorien der Verkörperung bieten, und der Dialog mit 4E-Kognition. Ein besonderes Augenmerk wird dabei auf die Beziehung zwischen Semiose und Wahrnehmung gelegt, wie sie von *Kant and the Platypus* [Kant und das Schnabeltier] (Eco 1997) bis zu *Cognitive Semiotics* (Paolucci 2021) artikuliert wurde.

Schlüsselwörter. Kognitive Semiotik, Semiotik der Wahrnehmung, Bedeutung und Erleben, 4E-Kognition, Italienische Semiotik

1. Cognitive semiotics in Italy

Leafing through this volume, even a non-expert reader will easily realise how difficult it is to speak of semiotics as a unitary disciplinary field. Maybe, asking ourselves what semiotics are, rather than what semiotics is, helps us to get over this embarrassment because talking about semiotics as a plurality of positions is the only way to approach a field of studies so various, multiform, and constantly evolving.

This difficulty is all the more evident when we speak about cognitive semiotics. Indeed, the schools of thought that apply to this label do not always mean the same thing, and they often carry out research programmes with methodologies and theories that are notably different. This is no exception in the Italian community, where the term “cognitive semiotics” is likewise ambiguous and not free from misunderstandings: when someone thinks of cognitive semiotics, she generally refers to the type of interpretative semiotics that Umberto Eco formulated in *A Theory of Semiotics* (1975). However, this is only one part of a broader story.

In this first interpretation, the compass of cognitive semiotics is the philosophy of Charles Sanders Peirce, whose fundamental ideas are that mind and semiosis coincide; that cognitive processes are all abductive processes produced by semiosis; and that the semiosis is not dependent on man, but the man is dependent on semiosis (CP 5.213–5.317). The adjective “cognitive” attributed to the philosophy of Peirce (Bonfantini 1980; Eco 1984) here indicates a very close identity between semiotic theory, gnoseology and epistemology, whose anti-psychologism went so well with the semiotics of the 1970s and 1980s when “the mind was considered a bad word” (Eco 2006: 5:55–5:57, my translation).

However, a second interpretation arrived soon, which spread in the 1990s particularly in Northern Europe, that was practically the opposite of the previous. Thanks to the success of psychology and the cognitive sciences, it was widely believed that in order to better understand the phenomena of meaning-making, it was necessary to investigate the cognitive mechanisms that were the basis of semiosis through a series of cross-methodologies that could show how cognition involves the semiotic dimension (Daddesio 1994; Brandt 1995). Thus, the anti-psychologism fundamental in the first interpretation was opposed by the psychologism constitutive of the second one.¹

Both these interpretations have been widely developed in Italy, where there is an established tradition of studies on Peircean cognitive semiotics (Bellucci 2017; Fabbrichesi 1993; Fadda 2013; Proni 2017) and a widespread interest by cognitive scientists and philosophers of mind in meaning, language and communication studies. However, a third interpretation of cognitive semiotics has been developed for the last 30 years mainly at the University of Bologna. The present article focuses on this third approach that represents the most organic and structured attempt in the Italian landscape to formulate a framework that takes together the other two interpretations,

providing a new and original research programme perfectly consistent with the reflections that had animated the semiotic debate of previous years.

From now on, I will use the label “Italian cognitive semiotics” when referring to this third research program.

The queries on which Italian cognitive semiotics reflects today are the same as those of the 1970s and 1980s: how can we know and interpret the world? How do we communicate with others? How do signs, meanings, texts, and languages, and ultimately all semiotic systems, interact with our experience and provide us with “a cognitive scaffolding which represents the background of our perception of the world” (Paolucci 2021: VIII)?

What has radically changed is the way in which these questions are answered. Italian cognitive semiotics, indeed, continuously measures up with a series of heterogeneous and multidisciplinary perspectives, trying to acquire instruments to resolve problems that still remain open in classical semiotics. In this dialogue, the preferred partners are the contemporary cognitive sciences, which must always be evaluated starting from the specificity of the semiotic paradigm. The result is a transformative hybridisation that shapes the domains at stake and allows us to rethink semiotics through the cognitive sciences and cognitive sciences through semiotics, in order to improve what for Umberto Eco was the only philosophy possible: the one that “reflects on the human being as an animal that interprets the world” (Eco 2006: 8:39–8:45, my translation).

2. Naturally, a novel

What do a physical place like the University of San Marino and a fictional place like a deserted ship named “Daphne” wrecked in the middle of the Pacific have in common? At first sight, nothing. But actually, these two places have given birth and inexhaustible nourishment to Italian cognitive semiotics. Two stories intertwine here.

Our first story begins in 1988, when the field of interpretative semiotics was about to end its battle against the deconstructive drifts of hermetic semiosis and restarted a discussion on biosemiotics and the threshold between nature and culture (Kull 2018).

That same year, Eco founded the *Centre for Semiotic and Cognitive Studies* at the University of San Marino, which, also thanks to the direction of Patrizia Violi, soon became the epicentre for the reflections that would encompass the following twenty years: here, several conferences were organised with the aim of establishing an interdisciplinary dialogue between the internationally most appreciated and well-known scholars who dealt with topics that, today, we would not hesitate to lead back to cognitive semiotics.²

During that period, cognitive semantics was acquiring more and more importance in language and cognition studies. Cognitive semantics’ approaches shared the idea that meaning directly depended on a deeper cognitive capacity for conceptualisation and mental representation. With the propos-

al of a strong semantic theory based on the role of the world, culture, and experience in creating concepts, they tried to move away from Chomskyan cognitivism and a purely syntactic and modular conception of language.

Interpretative semiotics started to be interested in cognitive semantics mainly because they had in common the same polemical targets: classical cognitivism and truth-conditional semantics. So, although accompanied by a bit of hesitation on both sides, a debate arose that marked the semiotics of years to come.³

Our second story takes place in 1643 on the ship “Daphne” and is narrated in the most philosophical of Umberto Eco’s novels: *The Island of the Day Before*. In an unusual way⁴ and with his proverbial irony, Eco himself pointed out the importance of this work for his semiotics when in 1998, responding to a provocation by Marconi about some of the theses of *Kant and the Platypus* (Eco 1997), he said:

I do not know how dogs think. Marconi reproaches me for not wanting to stick my nose into the black box of humans, let alone in that of animals. But I certainly do not refuse to make thought experiments on the subject – indeed I often make them in free zones, and I would like to remind readers that in my latest novel, *The Island of the Day Before*, taking up various ancient speculations, the most recent being by Gassendi, I tried to ask myself how stones think. Nor do I consider these pages pure narrative play, and I attribute to them, if only privately, some philosophical dignity (Eco, Ferraris and Marconi 1998: 43).

As Paolucci (2017a, 2017b) has pointed out, there is a double soul of Echi-an philosophy made by fragments of non-philosophy. Fiction, in fact, would have the role of showing what theory cannot explain, bringing together in the cosmological and closed dimension of the novel the debates and theories that Eco elaborated and confronted every day.

With *The Island of the Day Before*, something even more extraordinary happens: the novel not only shows but anticipates the themes and the problems of the theory. The plot is straightforward: a narrator retrieves papers from a diary dating back to 1643, which contains letters that the adventurer Roberto de la Grive wrote after having been shipwrecked in the middle of the Pacific on a deserted ship in front of an island that was near but unreachable.

In these letters, Roberto tells us about the days spent on the Daphne between the remembrances of his past life and the notes on his activities as a castaway. In these reports, Roberto often strives to account for the wonder provoked by the unknown place, resorting to very daring metaphors. In addition, Roberto decides to write a novel about his beloved and his supposed brother/nemesis Ferrante, a fictional story that he will end up believing after a fever dream.

Thus, Eco’s work stages the link between memory, imagination and experience, the power and the limits of language, the value of metaphor as a conceptual instrument⁵, the fatigue of hypotyposis, and more, the border between realism and nominalism, and between reality, dream, and fiction (Fig. 6).

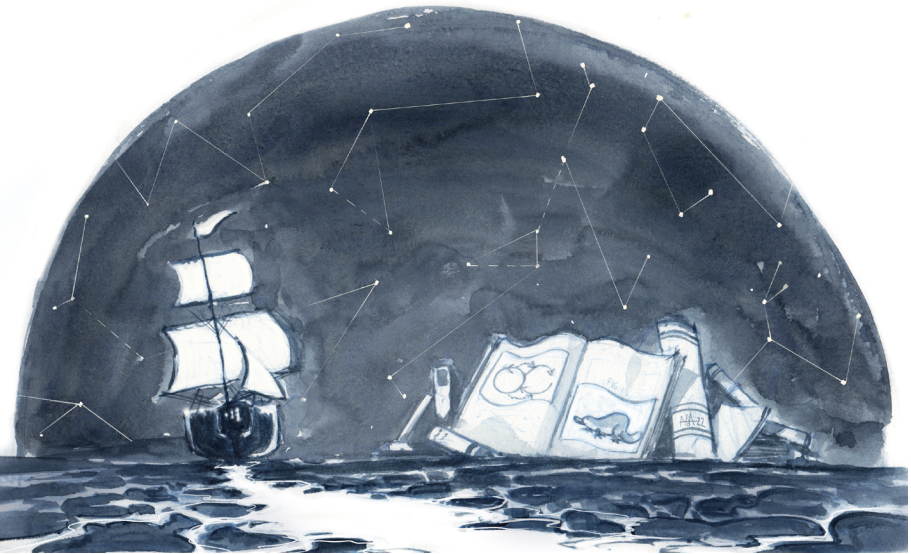


Fig. 6. Marco Turambar d'Alessandro, Tarowean – Il giorno delle sorprese, 2022. Inspired by Umberto Eco's *The Island of the Day Before*. Courtesy of the author.

Eco decided not to use words that did not yet exist in the 17th Century to write the novel. This self-imposition causes the descriptive effort of Roberto (and Eco) to coincide with that of the entire encyclopaedic repertoire of the Baroque period, forced to infinite contortions in an attempt to approximate, to verify and recognise what that world of flashes and colours could have represented for an Italian of the time. Here is a taste of it:

If until that day he had never heard birds really sing, neither could Roberto say he had ever seen birds, at least not in such guises, so many that he asked himself if they were in their natural state or if an artist's hand had painted them and decorated them for some pantomime, or to feign an army on parade, each foot-soldier and horseman cloaked in his own standard. An embarrassed Adam, he could give no names to these creatures, except the names of birds of his own hemisphere: That one is a heron, he said to himself, that a crane, a quail [...]. But it was like calling a goose a swan (Eco 1994: 31).

Roberto, educated to “see through the words”, is now forced to create new ones. He must create new rules in order to interpret the new reality that he is facing: “Roberto did not simply gaze at the constellations: he was obliged to define them” (ivi: 326). Thus, *The Island of the Day Before* is a long thought experiment to understand how meaning, language, cognition and experiences intertwine: how can Roberto explain what he sees? And how does he recognise the thing he has never seen before? Is the metaphor sufficient to express the meaning of the experience? Is there a meaning in experience even without the language?

This is the first book of Italian cognitive semiotics because it showed the problems that the theory tried to explain and because, even nowadays, it pushes the reader to wonder about the power of semio-linguistic systems and their role in scaffolding our knowledge of the world and shaping our experience.

3. The experientiality of semantics

The first answer to the questions formulated during those years was Patrizia Violi's book *Meaning and Experience* (1997), in which the semiologist reflected on the lexical meaning holding together the different descriptions provided by the main semantic traditions (logical-analytical, structuralist, and cognitive). The book's thesis appeared very strong at the time and consisted mainly in claiming a non-autonomy of the linguistic meaning: for Violi, it was impossible to describe meaning with only differential models or componential analysis of semantic traits. The reason was, that lexical meaning is as deeply implicated with the cultural system as with our conceptual, inferential, emotional and perceptual systems that facilitate recognition and categorisation operations.

Thus, the book's argumentation proceeds through a close debate between the principal semantic models, particularly those of cognitive semantics, showing some of their critical issues, limits, and naïvetés.

Eleanor Rosch's prototype theory (1973) represented a crucial point in this argumentation because it was the theory that, for Violi, allowed semantics to cross the boundaries between the intra-linguistic, conceptual, and experiential dimensions of lexical meaning description. Prototypes are typical conceptual models that support the modalities of organisation and categorisation through 'analogies' and 'similarities'. These modalities, in Violi's account, provided the basis to describe meaning using an encyclopaedic and inferential model. For Violi, a prototype was not the meaning of a word but its conceptual background: a categorial and semantic regularity that, once created, helped to stabilise particular inferential paths that connect the meaning of a word to the experience of the world.

Starting from the critique of the standard prototype theory, Violi advanced her original theoretical proposal: lexical semantics should be

- a. experiential because it is necessarily founded on schemes (intersubjective, encyclopaedic and perceptive) that allow us a knowledge of the world, and
- b. inferential, because words are already local organisations of some of these schemes and interact with them, providing interpretive and inferential anchors to meaning understanding and use.

In *Meaning and Experience*, a series of theoretical instruments were introduced to explain the intrinsic dynamical regularity of the lexical meaning:

“essential” and “typical properties”, “semantic” and “encyclopaedic competence”, the “standard context” etc. These tools accumulatively helped to create an original theory whereby meaning is the result of the social uses of the language that regulates the encyclopaedic meaning through a form of intersubjective organisation.

This idea was later further radicalised by the author, who in a later essay (Violi 2006) explained the importance of the situated and intersubjective dimensions present when forming what is called the “semantic potential” of words. In a few words, the linguistic use is the function that creates a typification of a word’s meaning dependent on the frequency of its actualisations. The abstract type that semantics tries to describe is directly equivalent to the result of semiotic ‘adjustment’ processes that take place *in vivo* and that allow the elevation of a given token to a type only according to local encyclopaedic pertinence.

Violi’s reflections have been absolutely fundamental for successive semiotic research and have anticipated some of the themes that are still at the centre of the philosophical and linguistic debates in Italy: on the one hand, the traces of the union of social and experiential dimensions can be found in the discussions of philosophy of language with the “embodied turn” (Liuzza, Borghi and Cimatti 2010; Diodato 2019) and in the investigation of the boundaries between language and perception (Cimatti and Paternoster 2015); on the other hand, the ideas that connected experience, body, practices and semantics have been re-discussed in a tradition that comes to Italy from the French cognitive and morphogenetic semantics (La Mantia 2012; Bondi ed. 2012; Galofaro 2012).

4. Semiosis and perception

4.1 “*Kant and the Platypus*” and some consequences on visual semiotics

Also in 1997, Umberto Eco published *Kant and the Platypus*. This book is the acme of Eco’s attempt to merge Hjelmslevian structuralism and Peircean semiotics. Here, Eco resumed some of the debates that had animated semiotics in the 1970s and 1980s⁶, addressing them in a new way: the problem of iconism, the discussion on the lower semiotic threshold, the themes of reference, recognition and categorisation, the theme of the mirror image and of the truth.

The main aim of the book was to define the relationship between semiosis, perception and reality: if in previous years Eco had dealt with reality, identified as the dynamic object of Peirce, only as a dimension *ad quem* of semiosis, in *Kant and the Platypus* he started from the problem of the *a quo* of semiosis, questioning how starting from the dynamic object, that constitutes an amorphous continuum, we arrive at harnessing it with the nets of signification.

The first step of the book consists in defining this *a quo* dimension of the reality, defined as

Something-that-sets-to-kicking us and says ‘Talk!’ to us – or ‘Talk about me!’ or again, ‘Take me into consideration!’ (Eco 1997: 14).

It is the “being” that pushes us to meaning-making. However, this reality doesn’t facilitate its representation through signs with a correspondence between semiosis and world: its primary role is to limit the interpretation through lines of resistance that say “NO” to some inferential processes.⁷

Then, how does this relationship between being and semiosis work? This is what Eco explained in the rest of the book, trying to define “the characteristics of a cognitive semantics” (Eco 1997: 5). Eco’s thesis was that between the continuum of dynamic object and signification, there is an intermediate level that pre-structures the continuum: it is the level of perception that works as a medium between world and meaning. Perception is, in Eco’s opinion, a particular dimension in which non-semiotic and dyadic processes (the so-called “primary iconism”) come together with triadic semiotic elements that allow the cognitive functions of identification, recognition, and categorisation of a token under a type. Therefore, perception has a hybrid form, in which the result of the stimulus-response adequacy between reality and retinal image, that is, the primary icon (conceived as the lower threshold of semiosis), needs an elaboration through a perceptive judgement, already imbued with semiosis which means with triadic relations.

This theoretical move has been defined as a form of “semiotization of the referent” (Violi 2000: 7): not only semiotic processes have a role in the determination of reality, but they meet it halfway, in the area of perception where the continuum already exhibits lines of tendencies and resistance that stabilise categorial parameters of the experience. The role of perception is more evident when we face an unknown object, as has happened with the platypus at the end of the 18th Century: the explorers, although they did not possess cognitive schemas for the recognition of the animal, started the process of interpretation from a perceptive pre-structuration of the referent that led them to an attempt of categorisation, compared by Eco to the Kantian reflective judgment. Because there was a lack of an immediate object useful to recognise the platypus, it must be built *ex novo* starting from the perceptive manifestation of the object through chains of inferences and contracts.

In Eco’s theory, the creation *ex novo* of the immediate object is a result of an act of imagination that produces a “schematization” of the percept that provides a first categorial hold, called “cognitive type”, that is a private and individualistic schema, directly connected to the subject’s capacity for conceptualisation. When the characteristics of the cognitive type are shared with others through signs, it acquires a public dimension that transforms it into a contractable meaning, called “nuclear content”, the public side of the “cognitive type”.

Cognitive types and nuclear contents interact continuously and are shaped simultaneously by the public dimension of meaning, the encyclopaedia, which provides other series of knowledge, called “molar contents”, related to the couple cognitive type/nuclear content.⁸ Eco analysed how the interplay between semiosis, perception and encyclopaedia produces the capacity for recognition, individuation, and reference, underlying the contractual and fallible dimension of every act of knowledge and categorisation.

Finally, the last part of *Kant and the Platypus* tackled the famous debate on iconism that was one of the hot topics of semiotics in the 1970s, updating it thanks to the new considerations on reality and perception made in the first part of the book. Here, Eco reconsidered some of his previous ideas about the conventional status of images, and he admitted that iconic signs acquire meaning not only for a relationship of similarity with the represented object created conventionally, but even thanks to non-conventional relationships of likeness with the referent. The likeness of a sign with its object is produced through surrogates of perceptual stimuli that hit the perceptive field of the subject, causing perceptive effects that are really similar to those of the represented objects. Thus, there are different types of iconic signs (or “hypoicons”). Some have a meaning mainly based on the likeness with the immediate object and are more motivated; others are more based on similarity and are more conventional. However, it is important to say that, for Eco, a fully motivated sign, a pure likeness, cannot exist. When there are purely motivated images, there are no signs, as the case of the mirror images shows, because there is no kind of mediation between the object and sign.

This division between likeness and similarity brought Eco to elaborate a new theoretical proposal that differentiated the kind of interpretive modality of iconic signs. Indeed, the iconic sign can be perceived simply through the dimension of surrogate stimuli, and in this case, the interpretation is a basic semiotic process similar to the one used in the standard perception: this modality is called “alpha mode”. On the contrary, when the image is considered as the occurrence of a semiotic relation with expression and content planes, there is the “beta mode”.

These final considerations expressed by Eco in the last part of *Kant and the Platypus* were highly significant for the reconsideration of some classical problems in the semiotics of the image, but perhaps they have not been fully exploited yet.

Piero Polidoro has undoubtedly been the scholar who has continued Eco's last theoretical reflections on the hypoicons, trying to form a dialogue between structural semiotics and North European cognitive semiotics. On this point, a first contribution by Polidoro, that needs to be reported, consists of the attempt to update the theory of alpha and beta modes, thanks to a comparison with the cognitive semiotics of Sonesson and with the theories of vision of David Marr, so as to make it heuristic in the analysis of particular perceptual phenomena such as *trompe-l'œil* and their effects (Polidoro 2012). A second contribution comprises the recent proposal to reformulate the themes of the meaning of plastic formants in semiotics start-

ing from the embodied theories of Johnson and comparing them with Meyer's theory of perception and with Eco's theories (Polidoro 2019).

4.2 *The issue of primary iconism and "The Threshold and the Infinity"*

The whole Echian approach to perceptive semiosis in 1997 depended on a reflection that started from Peirce's writings, tracing an intuitionist turning point, reflected in the concept of primary iconism introduced by Eco. In fact, Eco, relying on some interpretations of the Peircean writings and the studies on vision of David Marr (1982), believed that perception was a semi-otic process divided into phases, in which, starting from an element of "firstness" (understood as pure quality), and passing through the "secondness" (an attribution of that quality to its object), we finally reach a phase of interpretive "thirdness", in which we could speak ultimately of the immediate object, the object represented by the sign.

This interpretation proved to be problematic, as was pointed out to Eco by one of his students, Claudio Paolucci, since his doctoral thesis (for a reconstruction, see Paolucci 2015). In fact, Peirce has never thought of the categories of firstness, secondness and thirdness as elements logically and temporally separated, but always as categorical elements included in every process of knowledge, constituents of the structure underlying any phenomenal manifestation that Peirce called "phaneron" (hence the name "phaneroscopy", Fabbrichesi 2018). Paolucci then pointed out that Eco, when he identified the pre-semiotic dimension of perception and the irruption of novelty in the perceptive field, performed a non-semiotic type of reasoning, forgetting the Peircean lesson: in identifying a new *a quo* as something that kicks us and pushes us to the exercise of interpretation, Eco ignored that for Peirce the something new, the firstness, always emerges from a field of regularity on which it stands, the thirdness.

In the following years, on the basis of these considerations and a critique of Marr's visual models (1982), Paolucci (2010: chapt. 4, 2017c, 2021) would propose a new updated model of perception that considers the Peircean phaneroscopy and Jean Petitot's morphogenetic studies (Petitot 2011). In Paolucci's theory, a phase of primary iconism of the stimulus-response type could not exist because the stimuli that hit the retina are constantly shaped and modified by sub-personal morphological processes. For example, this happens in perceptual illusions and gestalt experiments or in the case of the smoothing over of the blind spot in the visual system.

Eco replied to these critiques in a very important essay of 2007 that marked a discontinuity in the Italian cognitive semiotics that, in my opinion, is at least as important as that introduced with *Kant and the Platypus*. In "The Threshold and the Infinity" (in Eco 2007), Eco reformulated his idea of a primary icon, no longer seen as an element that can be placed below the lower threshold of semiotics, but as "a primum for me, at that moment, and it is such only in some respect or capacity" (Eco 2007: 516).

Thus, the firstness is the result of an act of molar pertinentisation operated by a subject in a broader background of semiotic molecular processes of which she knows nothing. It can be noticed that Eco's cosmological-ontological argumentation dissolves, leaving room for a more phenomenological one. There is a threshold then, but it is relative to a subject, and Eco uses it in order to show that the subject is always historically placed in semiosis and cannot map itself to a molecular level no matter how hard she tries. The subject can start only from a *primum* that she has to cut and extract from the flow of semiosis in progress (Fabbrichesi 2017). That is the real revolution: among the infinitesimal and molecular processes that pertain to the cosmological level and the processes of "molar semiosis", in which there is something that stands in front of someone and attracts her attention, Eco introduced a living operator that since *A Theory of Semiotics* (Eco 1975: 314–319) he had always refused to treat: the Subject.

Nevertheless, a fundamental doubt remained. What (or who) is this subject? Eco defined it as

any instance capable of saying I that somehow enters into the semiosis from the material and corporal outside-what I am speaking about is a brain (Eco 2007: 525).

Then, the notion of Eco's subject seems to correspond to a self-conscious brain, while when he spoke about the molecular semiosis, he seemed to refer almost exclusively to semiotic processes that take place in the brain at a subconscious level. Thus, on the one hand, Eco admitted a semioticity of unconscious cognitive processes; on the other, placing himself in an internalist perspective, he recognised this semiosis as an operation made by the brain alone. It seems strange since, at that time, the function of the body in semiosis was being discussed.

5. From the body to the world

5.1 Which body for which semiotics?

The first decade of the 2000s saw the explosion in psychological, cognitive, philosophical, and linguistic studies of what has been defined as the corporeal or embodied turn. During those years the body, previously relegated to a secondary role in the classical cognitive sciences, assumed a completely new centrality and very different theories were spreading, stressing the need to anchor cognitive processes to a bodily dimension.

However, in an excellent article of 2003, Patrizia Violi, who was one of the first to emphasise the importance of the bodily dimension in studies on cognition and meaning, stressed the dangers of what was becoming a real cultural trend, calling for prudence. Many models of embodiment, in fact, began to proliferate without a unified line among the different paradigms that used them, consequently producing very different models of the body

that ended up being treated as self-evident concepts. Therefore, from the outset, Violi pointed out that there were different notions of embodiment, some weaker and others stronger, and she also has shed light on the different models of the body, now understood as a body-brain, now as a situated body, now as a “body schema”.

In those years, the theories that spread the most were those of “embodied cognition” (Varela, Thompson and Rosch 1991; Lakoff and Johnson 1999), a strong conception of embodiment according to which the nature of the human mind is determined and shaped by the characteristics of the human body. Soon, however, many of these embodied theories have hypostatized the concept of the body, considering it as a given entity. What Violi contested the most was exactly the idea of the body as a pre-given fact, while the different meanings that it assumed within different theories effectively showed its nature as a constructed theoretical concept, a nature that was always forgotten and overshadowed: we build a representation of the body every time we try to explain how the body has a role in cognition. Nonetheless, the direction of the reification of the body affected cognitive semantics, which has progressively reduced the study of meaning to completely ahistorical representations of the body, and in some cases even semiotics. This happened, for example, when Jacques Fontanille in *Soma et Séma: Figures du Corps* (2004) considered corporeity as the origin of sense and identified it as the lost object of semiotic research, the auroral dimension of semiosis that, since *The Semiotics of Passions* (Greimas and Fontanille 1991), represented a very controversial element in the reformulation of Greimas theory.

It can be said that Italian semiotics has evolved away from the fallacy linked to the unquestioned concept of ‘body’, producing results that were quite different and that started from a “not romantic”⁹ interpretation of *De l’Imperfection* by Greimas (1987). Indeed, a reflection about the aesthetic and emotional dimensions of semiosis (see Fabbri 1998; Pezzini ed. 2001) had brought into the foreground the role of corporeity as a determining element in shaping sense at an ante-predicative level. In the Italian semiotic tradition, the body was not considered as the source of the sense, but rather as an instance of translation in continuous negotiation with the corporeity of the world, as a matter between the matter that establishes a field of signification in the encounter with the world (Marsciani 2007). The body was then understood as an instance of reality and regulation but always constitutively relational (Marsciani 1999), a field where the meaning articulates itself more than a precondition of the sense. It is never the individual body that is the centre of the signification but the body as “the chiasma between me and the world” (Marrone 2005: 172) that produces a meaningful view of the world since it is already and always in the world.

The result is a conception of a body in continuous *intercorporeal* and *intersubjective* bargaining: certainly, it is considered a transformer and a regulator of meaning, but also a historical product made by semiotic processes that shape and guide the possibilities of signification. In sum,

the body is always culturalised, or to say it better, semiotised (Violi 2012a; Marrone 2001). For these reasons, speaking about embodiment in Italian semiotics is possible only by seeing it as the emergence (and concretisation) of a local point of view in a field of signification

as a temporary clothing, as a somatic exteriorization, interconnected with the view-points of others, of an interior system of habits, of affections and affects (Migliore 2017: 130).

Then in the early 2000s, Italian cognitive semiotics certainly had to deal with embodied cognition, but this could only happen through those cognitive theories that deeply considered the intersubjective and situated dimension of embodiment (Fusaroli, Demuru and Borghi 2012). Therefore, it is not by chance that the attention of cognitive semiotics, from the first moments (anticipating the turning points of the following decade again), turned its gaze to the studies on ontogenesis that, in those years, showed, in a strong way, how the bodily and the intersubjective dimension were always co-implicated in a dyadic interaction (Ammaniti and Gallese 2014), which, by shaping a child's abilities, led to the acquisition of language and self-consciousness.

As Violi (2008) rightly points out, the bridge between these ideas and semiotics was already traceable in the Peircean conception, where the body had a fundamental relevance without being considered a privileged location of meaning: the philosophy of Peirce, in fact, crucially emphasises the primacy of the relationship. Starting from these reflections and the semiotic analysis of video recordings of mother-child interactions, Violi introduced the idea of a pre-conscious semiotic dimension distributed in intersubjective practices, that was particularly evident in cases of ontogenetic child development (Violi 2007; Violi 2012b).

This vision of semiosis – as anchored to the body and to intersubjectivity since the first moments of life – led to a total overcoming of the Echiian conception of subjectivity and a different location of molecular semiosis processes that were no longer relegated to simple unconscious neuronal processes but always already distributed. Also here, the Peircean influence was strong: indeed, as noted by Rossella Fabbrichesi (2015), in Peirce's philosophy, consciousness is always the result of semiotic inferential processes that move between inside and outside, generating the "entire cognitive result of living" (CP 7.527), that is the Peircean definition of the conscious experience.

In this perspective, the subject Eco has placed as a limit of the semiotic threshold is transformed and becomes a property emerging from the same molecular semiosis processes that, by stabilising in habits, constitute the thirdness on which every attempt of semiosis stands out (Paolucci 2010). In this way, Italian cognitive semiotics has acquired a new idea on the subject now thought of as emergent from semiosis and distributed between brain, body, practices, and intersubjectivity.

5.2 *Semiosis and the extended mind*

The reflections that emerged from this first decade soon led to what could be defined as the second season of Italian cognitive semiotics. Claudio Paolucci has promoted an original attempt to integrate Peircean semiotics with new considerations from the embodied, embedded, extended and enactive (4E) approaches to cognitive science.

Indeed, already by the end of the 90s, the embodied cognitive scientists realised that the body dimension alone was not sufficient to explain cognition. Therefore, they have developed new models: the body is always seen as located in an environment that provides material anchors to promote cognitive scaffolding. Moreover, they started to think of cognition as a distributed process involving objects, cultural practices, language, institutions, and other subjects. In short, these theories hold that the environment in which we are located is always active in structuring cognition, which thus becomes an externalised process, that is always diffused within a “cognitive niche”. Paolucci finds in these ideas a strong consonance with the spirit of the cognitive semiotics of Peirce, who saw the mind exactly as an external sign always connected to a complex network of semiotic processes¹⁰ (Paolucci 2011).

These innovative confluences between semiotics and new cognitive sciences led to the dedicated volume *The external mind* (Paolucci, Fusaroli and Granelli eds. 2011) of the journal *Versus* that collected crucial contributions by some protagonists of the 4E turn.¹¹

This was followed by a dense season in which Paolucci, with the young researchers of the University of Bologna, has tried to rethink the semiotic paradigm in the light of advances in the field of cognitive studies through two movements:

- A first movement tackles classical semiotic problems with a new gaze, for example, the concept of narrativity (Paolucci 2012a), the relationship between language, perception and intersubjectivity (Fusaroli 2011; Murgiano and Nardelli 2015), laughter (Paolucci and Caruana 2019, 2020), spatiality (Sykes 2021), and the semiotic status of mirror images (Lobaccaro and Bacaro 2021).
- A second movement consists of bringing semiotics to the heart of some of the hot debates of the cognitive sciences, such as the theories of social cognition (Paolucci 2012b, 2019), the theories of habits in cognition (Murgiano 2015), the debate on representations (Caravà 2019) and the acquisition of read-writing capacity (Martinelli 2020).

The decade following the first publication of the volume of *Versus* has therefore seen a decisive turn in semiotics towards the theories of 4E cognition¹², also thanks to all the seminars organised by the *Centro Internazionale di Studi Umanistici “Umberto Eco”* [International Center of Humanities Umber-

to Eco] which over time has hosted several scholars from these fields of research.

6. For a new cognitive semiotics

The transformative convergence of cognitive semiotics with 4E cognition has reached its final form in 2021 with the publication of the book *Cognitive Semiotics. Integrating Signs, Mind, Meaning and Cognition* by Claudio Paolucci. If *Kant and the Platypus* and *Meaning and Experience* have dialogued with the most theoretically advanced cognitive sciences of their time, today Paolucci does the same with enactivism and the theoreticians of the extended mind¹³ by reformulating all the problems of semiotics thanks to this updating of principles, methods, and theories. Thus, *Cognitive Semiotics* represents the completion of an ideal triad, resuming the originality of Eco's thought, figuring out semiotics as a "disciplinary platypus" (Paolucci 2017a), that is, as a vast field of research that brings together portions of other disciplines, able to build bridges and mediate between heterogeneous domains and identifying structural homologies that allow for innovative hybridisations.

The book advances a strong thesis, presenting itself as an attempted (re)foundation of a *de iure* cognitive semiotics: that is, a semiotic theory with a clear theoretical claim able to show how semiolinguistic reflection on signs, languages and meaning not only helps us to understand high-level cognitive phenomena, but even may enlighten us about the totality of the means by which we understand the world and give meaning to our experience.

To do this, Paolucci connects and confronts concepts developed in the 1970s and 1980s, like that of "narrativity" (Greimas 1970), semiotics as the "theory of lie", "semiotic system", "ratio difficilis", and "encyclopaedia" (Eco 1984) with the enactivist theories of Shaun Gallagher (2020) and Daniel Hutto (2008), the embodied neurosciences of Vittorio Gallese (2001), the extended mind theory of Andy Clark (2008) and the material engagement theory of Lambros Malafouris (2013). The result is a completely original theoretical framework where, beyond every division, biosemiotics¹⁴, interpretative semiotics and structural semiotics hybridise in a new enactive and anti-representational conception of semiosis, summed up in the author's words as:

- (1) an enactive form of sense-making, involving interaction with the external world;
- (2) a form of action mediated by meaning, where meanings are not representations of the world or truth conditions, but interpretive habits and sense-making activities;
- (3) a perspective in which texts, languages and semiotic systems represent not the expression of a pre-existing thought located in our heads, but forms structuring the way in which we think and know reality, or as cognitive scaffolding which represents the background of our perception of the world (Paolucci 2021: VII).

Chapter 1 and chapter 3 of the book are devoted to establishing a theoretical framework for this proposal. These are the chapters in which the reciprocal transformation of enactivist and semiotic paradigms is most evident and in which the idea of a semiotic mind is advanced. The proposal is clear and linear: we must start from the Echian definition of semiotics as the theory of *lie*. This move allows for a reading of every cognitive phenomenon as the result of a sign production in which a cognitive agent sets up significant surfaces capable of helping to trigger and promote an effective form of action. Cognition is nothing else than “sense-making” (Di Paolo, Cuffari and De Jaegher 2018), which is a cropping in the material continuum of the world of perceptive grabs, that Paolucci thinks of as a system of expressions already imbued with significances and values. This expressions’ objective is not to represent the world but to drive effective actions that are, in this framework, the enactive responses of the organism to the meaningful world that she contributes to creating with semiosis.

The theoretical founding comes together with an application of the cognitive semiotic approach to some of the hot topics in contemporary cognitive sciences, such as the linguistic self and social cognition and its disturbances.¹⁵ A key element that we need to underline at this point of our story is, that the last chapter of *Cognitive Semiotics* contains a critical rethinking of the theory of semiotic perception expressed by Eco (1997). Thanks to the contemporary cognitive theories of predictive processing and the “Goethian” theory of perception proposed by Jan Koenderink (2010), the Echian theory is totally reversed: where Eco individuated “primary iconism”, Paolucci instead proposes an idea of perception as controlled hallucination, according to which perception works thanks to a prediction that projects figures in the perceptive field based on habits, producing presentations and not representations of the world. In Paolucci’s view, perception is a form of creative imagination that produces signs controlled by environmental interactions, condemning us to perceive the future in the present, based on habits of interaction and the system of our expectations. Thus, there are no percepts without their prior anticipation, no perceptive novelty without the habits that constitute the background of our world perception: in Peirce words, no firstness without thirdness.

Immediately after the publication of the book, thanks to an axis between the University of Bologna and the University of Memphis, a new organisation is born: the *International Centre for Enactivism and Cognitive Semiotics*. The centre is led by Paolucci and founded by him with Daniel D. Hutto, Shaun Gallagher, Vittorio Gallese, Lambros Malafouris, Fausto Caruana and Catherine Legg, and has the aim of collecting and spreading the international research on enactivism and cognitive semiotics, and to improve and refine the methodological reflections for investigating the ways in which agents make sense of the world. This dialogue has only just begun, but thanks to the first series of seminars that saw wide public participation, it promises to respect the great tradition that binds the new cognitive semiotics to its cradle, the *Centre of Semiotic and Cognitive Studies* founded by Eco more than thirty years ago.

7. This is not the end of the novel

Hitherto, an attempt to draw a coherent line of development of Italian cognitive semiotics has been made. However, of course, this attempt can only be partial as the encounter between semiotics and cognitive sciences was not always programmatic, but sometimes also linked to some individual and circumscribed research experiences. Therefore, the situation is much more fragmented than what we have been able to outline, and we cannot always trace continuities: we could say that cognitive semiotics are evolving in parallel, even in leopard spots.

At this point, it is almost impossible to account for this dynamic situation, and too many developments are yet to come. However, as a partial conclusion, it is perhaps necessary to underline that the results of Italian cognitive semiotics in recent years are before everyone's eyes: not only does this disciplinary field convince more and more cognitive scientists and philosophers of mind, such as Antonino Pennisi¹⁶ and Vittorio Gallese¹⁷, who do not disdain forays into properly semiotic themes, but also, cognitive semiotics is attracting a range of funding related to European projects. This is a sign of good health for a young and varied disciplinary field that manages to provide new impacting cross-methodologies.¹⁸

At this point, the only possible leave is a relaunch that comes directly from the past, precisely from 1643. Cognitive semiotics has now fully solved some of the problems that the story of Roberto de la Grive posed to us: we know that language and experience communicate and translate each other, that narrations shape our ability to act in the world, and that language, as an extraordinary cognitive instrument, pushes us into the knowledge of what is new starting from the old, through the exercise of metaphors.

However, we still have very few ideas on the reasons why Roberto, shipwrecked on a deserted ship at a distant point not only in space but also in time, decided to write his autobiography and a novel despite being fully aware that no one would read it. Moreover, we have even less ideas about why at a certain point, Roberto imagines another story that is not his own but becomes his, and why his past, his present and his novel are all converged in the final dream that troubles him so much. Memory, imagination, and dream, then: these are also the main themes in a successive Umberto Eco book *The Mysterious Flame of Queen Loana* (Eco 2004). Perhaps there is still something to think about.¹⁹

The novels continue to suggest paths to undertake and possible fields of investigation: it would be appropriate to resume something that has been left out in the growth path of the discipline, also taking an excellent opportunity to join forces with those contemporary Italian philosophical and cognitive research directions that deal with the "Mental Time Travel" (Ferretti et al. 2017) and memory (Cimatti 2020).

Despite all the theories elaborated up until this point, this is not the end of the novel.

Notes

- * I want to thank Patrizia Violi for her help in discovering the history and roots of cognitive semiotics, Claudio Paolucci for his precious advice, and Gianfranco Marrone and Tiziana Migliore for their suggestions and tips. Without them, I would have described a less lively landscape.
- 1 Today, this second cognitive semiotics development can be traced in the Aarhus and Lund traditions of studies, which are gradually abandoning Peircean ideas in favour of a more phenomenological position and are reducing the use of semiotic terminology in the cases where they deem it unnecessary (Konderak 2018).
- 2 The invited speakers' list between 1988 to 2006 is enviable. To name but a few: Hilary Putnam, John Searle, Dan Sperber, Jean Petitot, Willard W. O. Quine, Saul Kripke, Donald Davidson, Gilles Fauconnier, Philip Johnson-Laird, Francisco Varela, Paul Churchland, Daniel Dennet, Hubert Dreyfus, Mark Johnson, Eleanor Rosch, Charles Fillmore, Jerry Fodor, Gerald Edelman, Richard Rorty, Ronald Langacker, Thomas Sebeok, Leonard Talmy, Michael Tomasello.
- 3 It is possible to find a first trace of this dialogue in the volume *Meaning and Mental Representations* (Eco, Santambrogio and Violi 1988).
- 4 It is well known that for most of his life Umberto Eco insisted on keeping separate the theoretical aspects of his production from those that are literary. However, in the volume of the *Library of the Living Philosophers* dedicated to his philosophy (Beardsworth and Auxier eds. 2017), Eco agreed to also include reflections on his novels. In his *Intellectual Autobiography* (Eco 2017) Eco himself acknowledged that his work as a novelist was not entirely independent of his philosophical work. Many of his pupils have always considered his literary production as a part of the philosophical activity. Today, Eco's novels are considered either a refraction of philosophical themes and their representation (Lorusso 2021), or as a real constitutive part of his philosophy that moves between saying and showing (Paolucci 2017a, 2017b).
- 5 In this novel the reflections on metaphor are entrusted to Padre Emanuele, a clear reference to the Italian literate and rethorician Emanuele Tesauro and to his work *Il Canocchiale Aristotelico* (1654). However, I don't exclude that this interest in the metaphor could be influenced even by *Metaphors We Live by* (Lakoff and Johnson 1980), that would be translated to Italian few years later by Patrizia Violi.
- 6 For a more focused discussion on the themes of *Kant and the Platypus* and their links with the general theory of Eco see Lorusso 2008 and Traini 2021; On the "problem of iconism" see Polidoro 2012 and 2015; to follow the evolution of the themes of the book, read the volume "Eco, Kant and the Platypus. Twenty years after" in *RIFL journal* edited by Pisanty and Traini (2017).
- 7 Eco defined this position as negative realism or contractual realism (Fadda 2017; Traini 2017). This concept has been appreciated a lot in philosophy by the advocates of new realism (Ferraris 2017).
- 8 For a critical position on the division between nuclear contents and molar contents see Bianchi (2017).
- 9 I owe this expression to Gianfranco Marrone (private communication).

- 10 On the convergences between Peircean thought and 4E cognition see also Caravà 2015; Fabbrichesi 2016.
- 11 The volume contains among others contributions of Massimiliano Cappuccio, Michael Wheeler, Shaun Gallagher, David Kirsh and Charles Goodwin. For an introduction to these topics see Fusaroli and Paolucci 2011.
- 12 It should be noted that Bologna's semiotic school is not the only one to have undertaken this path: in fact, research in cognitive semiotics related to media and filmology and deeply connected to neuroaesthetics and embodiment are going on at the Universities of Milan and Bergamo (Eugeni and D'Aloia eds. 2014). Particularly relevant are the filmological research on empathy (D'Aloia 2014), temporality (Eugeni 2018) and spatiality.
- 13 This passage of interests is not radical and total, as it shows the recent contribution by Costantino Marmo on Fillmore's frame semantics (Marmo ed. 2017).
- 14 Paolucci's attempt to redefine the limits of the "semiotic lower threshold" intercepts the long-standing claims of the Italian bio- and zoo- semiotic research (Prodi 1977; Cimatti 1998, 2018; Gensini 2018a, 2018b, 2020).
- 15 Topics on which Paolucci is principal investigator of the European project "NeMo": <https://site.unibo.it/nemoproject/en>, retrieved September 28, 2022).
- 16 The Department of Cognitive Sciences at the University of Messina has actively collaborated with Italian cognitive semiotics for more than 20 years. Their research on the bioevolutionary dimension of language (Pennisi and Falzone 2017), psychopathologies of language (Pennisi 1998), and embodiment (Pennisi 2021) strongly interacts with the Italian semiotic tradition, serving as a solid foundation for the ongoing debate (see Lobaccaro 2022).
- 17 At the Department of Neuroscience of the University of Parma, Vittorio Gallese is pursuing a series of research initiatives that are strongly aligned to cognitive semiotics, such as the embodied aesthetic experience (Gallese and Guerra 2020) and the evolution of cultural habits (Gallese 2021).
- 18 It is worth noting that Paolucci is the principal investigator of two Erasmus+ projects: the above-mentioned "NeMo" project (which aims to introduce innovative curricula and observational methodologies for children's schools in order to promote the screening and increased inclusion of children with autism spectrum disorder); and the "Fakespotting" project (which aims to develop debunking strategies and good educational practices against fake news). In addition, it is important to reference the work of Massimo Leone in the project ERC "FACETS – Face Aesthetics in Contemporary E-technological Societies", which aims to analyse how digital tools and technologies are changing the processes of meaning that involve the human face. Leone proposes a cross-methodology that considers not only anthropology, semiotics and visual arts, but also the cognitive and emotional dimension involved in face recognition processes (Leone ed. 2021).
- 19 Regarding this, a good starting point could be the study led by Maria Pia Pozzato (2017) on the visual and linguistic representation of the places of origin. In this work it is precisely the themes of memory and imagination that are addressed in an interdisciplinary way; although the semiotic and cognitive methodologies are not merged, they rather aim to offer a multiplicity of perspective on a common object.

Bibliography

- Ammaniti, Massimo and Vittorio Gallese (2014). *The Birth of Intersubjectivity. Psychodynamics, Neurobiology, and the Self*. New York: Norton Professional Books.
- Bianchi, Edoardo (2017). Kant and the Platypus cognitive semantics between mice, eggs and mosquitoes: Is an encyclopaedic schematism tenable? *Rivista Italiana di Filosofia del Linguaggio* 11, 1, 59–71. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/415> [retrieved November 9, 2023].
- Beardsworth, Sara and Randall E. Auxier (eds.) (2017). *The philosophy of Umberto Eco. The Library of Living Philosophers: volume XXXV*. Chicago: Open Court.
- Bellucci, Francesco (2017). *Peirce's Speculative Grammar. Logic as Semiotics*. New York: Routledge.
- Bondi, Antonino (ed.) (2012). *Percezione, semiosi e socialità del senso*. Milan: Mimesis.
- Bonfantini, Massimo A. (1980). Introduzione: la semiotica cognitiva di Peirce. In: Charles S. Peirce. *Semiotica*. Turin: Einaudi. Now in: Massimo A. Bonfantini (ed.). *Opere*. Milan: Bompiani 2003, 13–39.
- Brandt, Per Aage (1995). *Morphogenesis of meaning*. Aarhus: Aarhus University Press.
- Caravà, Marta (2015). La nozione di “mente estesa” tra scienze cognitive, semiotica e pragmatismo. Alcune riflessioni a partire dal tema del linguaggio. *Rivista Italiana di Filosofia del Linguaggio* 0, 2, 139–151. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/301> [November 9, 2023].
- Caravà, Marta (2019). The Threshold of Representations. Integrating Semiotics and the Cognitive Sciences. *Versus. Quaderni di studi semiotici* 128, 157–174.
- Cimatti, Felice (1998). *Mente e Linguaggio negli Animali. Introduzione alla Zoosemiotica Cognitiva*. Rome: Carocci.
- Cimatti, Felice (2018). *A Biosemiotic Ontology. The Philosophy of Giorgio Prodi*. Dordrecht: Springer.
- Cimatti, Felice (2020). *La fabbrica del ricordo*. Bologna: Il Mulino.
- Cimatti, Felice and Alfredo Paternoster (2015). Introduzione. Percezione e linguaggio. *Rivista Italiana di Filosofia del Linguaggio* 9, 2, I–II. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/329> [retrieved November 9, 2023].
- Clark, Andy (2008). *Supersizing the Mind*. Oxford: Oxford University Press.
- Daddesio, Thomas C. (1994). *On Minds and Symbols. The Relevance of Cognitive Science for Semiotics*. Berlin: De Gruyter Mouton.
- D'Aloia, Adriano (2014). *La vertigine e il volo. L'esperienza filmica fra estetica e neuroscienze*. Rome: Edizioni Fondazione Ente dello Spettacolo.
- Di Paolo, Ezequiel, Elena Cuffari and Hanne De Jaegher (2018). *Linguistic Bodies. The continuity between life and language*. Cambridge, MA: MIT Press.
- Diodato, Filomena (2019). Embodiment e linguaggio: Funzione segnica e soglia semiotica. *Syzetesis* VI/2/2019, 321–339. URL: <http://hdl.handle.net/11573/1333814> [retrieved November 9, 2023].
- Eco, Umberto (1975). *Trattato di Semiotica Generale*. Milan: Bompiani. Rewritten by the author in English as: *A Theory of Semiotics*. Bloomington, IN: Indiana University Press 1976.

- Eco, Umberto (1984). *Semiotica e filosofia del linguaggio*. Milan: Bompiani. English translation: *Semiotics and the Philosophy of Language*. Bloomington, IN: Indiana University Press.
- Eco, Umberto (1994). *L'isola del giorno prima*. Milan: Bompiani. English translation by William Weaver: *The Island of the Day Before*. New York: Harcourt Brace & Co 1995.
- Eco, Umberto (1997). *Kant e l'ornitorinco*. Milan: Bompiani. English translation by Alastair McEwen: *Kant and the Platypus. Essays on Language and Cognition*. London: Secker & Warburg 1999.
- Eco, Umberto (2004). *La misteriosa fiamma della regina Loana*. Milan: Bompiani. English translation by Geoffrey Brock: *The Mysterious Flame of Queen Loana: An Illustrated Novel*. Orlando: Harcourt 2005.
- Eco, Umberto (2006). Umberto Eco, Semiotica: origini, definizione, sguardo sul presente. Interview in Monte Cerignone. November 16, 2006 [Youtube] URL: https://www.youtube.com/watch?v=6doQdNdGgzI&ab_channel=AndreaCirla [retrieved November 9, 2023].
- Eco, Umberto (2007). *Dall'albero al labirinto. Studi storici sul segno e sull'interpretazione*. Milan: Bompiani. English translation by Anthony Oldcorn: *From the Tree to the Labyrinth: Historical Studies on the Sign and Interpretation*. Cambridge, MA: Harvard University Press 2014.
- Eco, Umberto (2017). Intellectual Autobiography. In: Sara Beardsworth and Randall E. Auxier (eds.). *The philosophy of Umberto Eco*. Chicago: Open Court, 1–74.
- Eco, Umberto, Maurizio Ferraris and Diego Marconi (1998). Lo schema del cane. *Rivista di estetica* 8, 2/1998, 3–27; English translation by Sarah De Sanctis: The Dog Schema. *Rivista di estetica* 76, 2021, 10–39. URL: <https://journals.openedition.org/estetica/7660> [retrieved: November 9, 2023].
- Eco, Umberto, Marco Santambrogio and Patrizia Violi (eds.) (1988). *Meaning and Mental Representations*. Bloomington, IN: Indiana University Press.
- Eugeni, Ruggero (2018). What Time is In? Subjective Experience and Evaluation of Moving Image Time. *Reti, Saperi, Linguaggi. Italian Journal of Cognitive Science* V, 1/2018, 81–96.
- Eugeni, Ruggero and Adriano D'Aloia (eds.) (2014). *Neurofilmology. Audiovisual Studies and the Challenge of Neurosciences*. Special issue of *Cinéma et Cie. International Film Studies Journal* 14, 22/23, spring/fall. URL: <https://riviste.unimi.it/index.php/cinemaetcie/issue/view/1721> [retrieved November 9, 2023].
- Fabbri, Paolo (1998). *La svolta semiotica*. Rome and Bari: Laterza.
- Fabbrichesi, Rossella (1993). *Introduzione a Peirce*. Rome and Bari: Laterza.
- Fabbrichesi, Rossella (2015). Esiste la coscienza? Le tesi inattuali di Peirce e James a confronto con la filosofia novecentesca. *Rivista Italiana di Filosofia del Linguaggio* 0, 2, 152–163. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/302> [retrieved November 9, 2023].
- Fabbrichesi, Rossella (2016). *Peirce, Mead, and the theory of extended mind*. Commons. The Digital Companion to C.S. Peirce. URL: <http://www.commens.org/encyclopedia/article/fabbrichesi-rossella-peirce-mead-and-theory-extended-mind> [retrieved November 9, 2023].

- Fabbrichesi, Rossella (2017). Eco, Peirce, and Iconism: A Philosophical Inquiry. In: Sara Beardsworth and Randall E. Auxier (eds.). *The philosophy of Umberto Eco*. Chicago: Open Court, 305–324.
- Fabbrichesi, Rossella (2018). Come la fenomenologia diventò faneroscopia: il progetto di Peirce di una “Filosofia Suprema”. *Bollettino Filosofico* 33, 217–225.
- Fadda, Emanuele (2013). *Peirce*. Rome: Carocci.
- Fadda, Emanuele (2017). On Negative Realism. In: Torkild Thellefsen and Bent Sørensen (eds.). *Umberto Eco in His Own Words*. Berlin and Boston: De Gruyter Mouton, 243–247.
- Ferraris, Maurizio (2017). Fare la verità: proposta di una ermeneutica neorealista. *Rivista Italiana di Filosofia del Linguaggio* 11, 1, 187–199. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/422> [retrieved November 9, 2023].
- Ferretti, Francesco, Ines Adornetti, Alessandra Chiera, Serena Nicchiarelli, Rita Magni, Giovanni Valeri and Andrea Marini (2017). Mental Time Travel and language evolution: a narrative account of the origins of human communication. *Language Sciences* 63, 105–118. URL: <https://doi.org/10.1016/j.langsci.2017.01.002> [retrieved November 9, 2023].
- Fontanille, Jacques (2004). *Soma et séma. Figures du corps*. Paris: Maisonneuve et Larose.
- Fusaroli, Riccardo (2011). The Social Horizon of Embodied Language and Material Symbols. *Versus. Quaderni di studi semiotici* 112–113, 3–31.
- Fusaroli, Riccardo, Paolo Demuru and Anna M. Borghi (2012). The intersubjectivity of embodiment. *Cognitive Semiotics* 4, 1, 1–5.
- Fusaroli, Riccardo and Claudio Paolucci (2011). The External Mind: an Introduction. *Versus. Quaderni di studi semiotici* 112–113, 3–31.
- Gallagher, Shaun (2020). *Action and Interaction*. Oxford: Oxford University Press.
- Gallese, Vittorio (2001). The Shared Manifold Hypothesis: from mirror neurons to empathy. *Journal of Consciousness Studies* 8, 5–7, 33–50.
- Gallese, Vittorio (2021). Brain, Body, Habit and the Performative Quality of Aesthetics. In: Italo Testa and Fausto Caurana (eds.). *Habits: Pragmatist Approaches from Cognitive Neuroscience to Social Science*. Cambridge, UK: Cambridge University Press, 376–394.
- Gallese, Vittorio and Michele Guerra (2020). *The Empathic Screen. Cinema and Neuroscience*. Oxford: Oxford University Press.
- Galofaro, Francesco (2012). We Have to change mind. Neural Plausibility and the Crisis of Cognitive Explanations. *Rivista Italiana di Filosofia del Linguaggio* 0 (SFL), 101–115. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/65> [retrieved November 9, 2023].
- Gensini, Stefano (2018a). Appunti su semiotica ed etologia: un dialogo (parzialmente) interrotto. *Reti, Saperi, Linguaggi* 7, 97–110.
- Gensini, Stefano (2018b). A proposito di zoosemiotica. Gli inizi della storia. In: Marcello Walter Bruno, Donata Chiric, Felice Cimatti, Giuseppe Cosenza, Anna De Marco, Emanuele Fadda, Giorgio Lo Feudo, Marco Mazzeo and Claudia Stancati (eds.). *Linguistica e filosofia del linguaggio. Studi in onore di Daniele Gambarara*. Milan: Mimesis, 263–282.

- Gensini, Stefano (2020). Aspects of the ongoing debate on animal communication. (Zoo) semiotics and cognitive ethology. In: Antonino Pennisi and Alessandra Falzone (eds). *The Extended Theory of Cognitive Creativity. Perspectives in Pragmatics, Philosophy & Psychology* 23, 199–216. Cham: Springer. URL: https://doi.org/10.1007/978-3-030-22090-7_13 [retrieved November, 9 2023].
- Greimas, Algirdas J. (1970). *Du sens*. Paris: Seuil. English translation by Paul J. Perron and Frank H. Collins: *On Meaning*. Minneapolis: University of Minnesota Press, 1987.
- Greimas, Algirdas J. (1987). *De l'imperfection*. Périgueux: Pierre Fanlac.
- Greimas, Algirdas J. and Jacques Fontanille (1991). *Sémiotique des passions: des états de choses aux états d'âme*. Paris: Seuil. English translation by Paul J. Perron and Frank H. Collins: *The Semiotics of Passions: From States of Affairs to States of Feelings*. Minneapolis: University of Minnesota Press 1993.
- Hutto, Daniel D. (2008). *Folk psychological narratives: The sociocultural basis of understanding reasons*. Cambridge, MA: MIT Press.
- Koenderink, Jan J. (2010) Vision and information. In: Liliana Albertazzi, Gert J. van Tonder and Dhanraj Vishwanath (eds.). *Perception beyond inference: The information content of visual processes*. Cambridge, MA: MIT Press, 27–58.
- Konderak, Piotr (2018). *Mind, Cognition, Semiosis: Ways to Cognitive Semiotics*. Warsaw: UMCS.
- Kull, Kalevi (2018). Umberto Eco on the biosemiotics of Giorgio Prodi. *Sign Systems Studies* 46, 2–3, 352–364.
- La Mantia, Francesco (2012). *Che senso ha? Polisemia e attività di linguaggio*. Milan: Mimesis.
- Lakoff, George and Mark Johnson (1980). *Metaphors we live by*. Chicago: University of Chicago Press.
- Lakoff, George and Mark Johnson (1999). *Philosophy in the flesh: the embodied mind and its challenge to Western thought*. New York: Basic Books.
- Leone, Massimo (ed.) (2021). Transhuman Visage. *Lexia* 37–38.
- Liuzza, Marco, Anna Maria Borghi and Felice Cimatti (2010). *Lingue, corpo, pensiero: le ricerche contemporanee*. Rome: Carocci.
- Lobaccaro, Luigi (2022). Default Mode Network, Schizophrenia, and Narrativity: Comments on Psychopathology of Language. *Reti, saperi, linguaggi, Italian Journal of Cognitive Sciences* IX, 2, 285–314.
- Lobaccaro, Luigi and Martina Bacaro (2021). What is in the Mirror? On Mirror Self-Recognition, Semiotics, and Material Engagement. *Reti, saperi, linguaggi, Italian Journal of Cognitive Sciences* VIII, 1/2021, 103–124.
- Lorusso, Anna Maria (2008). *Umberto Eco: temi, problemi e percorsi semiotici*. Rome: Carocci.
- Lorusso, Anna Maria (2021). La filosofia per Umberto Eco. Introduzione all'edizione italiana. In: Anna Maria Lorusso (ed.). *La filosofia di Umberto Eco*. Milan: La Nave di Teseo [It. Ed. of Beardsworth and Auxier 2017], IX–XXVII.
- Malafouris, Lambros (2013). *How things shape the mind. A theory of Material Engagement*. Cambridge, MA: MIT Press.
- Marmo, Costantino (ed.) (2017). *La semantica dei frame di Charles J. Fillmore. Un'antologia di testi*. Bologna: Patròn.

- Marr, David (1982). *Vision: A Computational Investigation into the Human Representation and Processing of Visual Information*. New York, NY: Henry Holt and Co., Inc.
- Marrone, Gianfranco (2001). *Corpi Sociali*. Turin: Einaudi.
- Marrone, Gianfranco (2005). *La Cura Ludovico*. Turin: Einaudi.
- Marsciani, Francesco (1999). Del corpo-massa. In: Lucia Corrain and Pierluigi Basso (eds.). *Eloquio del senso. Dialoghi semiotici per Paolo Fabbri*. Genova: Costa&Nolan, 299–307.
- Marsciani, Francesco (2007). Il corpo. In: Cristina Demaria and Siri Nergaard (eds.). *Studi culturali. Temi e prospettive a confronto*. Milan: McGraw-Hill, 187–221.
- Martinelli, Paolo (2020). Accessing to “read-writing”. Production of signs, enunciation, exaptation. *E/C* 30, 43–51. URL: <https://mimesisjournals.com/ojs/index.php/ec/article/view/741> [retrieved November, 9 2023].
- Migliore, Tiziana (2017). Embodiment Theories and Alternative Perspectives on the Body. *Studi di Estetica* 8, 117–132.
- Murgiano, Margherita (2015). Pensiero e azione: l’habit peirceano fra enattivismo e cognizione distribuita. *Rivista Italiana di Filosofia del Linguaggio* 10, 2, 192–202. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/305> [retrieved November, 9 2023].
- Murgiano, Margherita and Giulia Nardelli (2015). Usi linguistici, strumenti sociali: uno sguardo semiotico su esperienza, linguaggio e percezione. *Rivista Italiana di Filosofia del Linguaggio* 9, 2, 29–41. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/325> [retrieved November, 9 2023].
- Paolucci, Claudio (2010). *Strutturalismo e interpretazione*. Milan: Bompiani.
- Paolucci, Claudio (2011). The “External Mind”: Semiotics, Pragmatism, Extended Mind and Distributed Cognition. *Versus. Quaderni di studi semiotici* 112–113, 69–96.
- Paolucci, Claudio (2012a). Narratività e cognizione. Un percorso di frontiera tra semiotica e scienze cognitive. In: Anna Maria Lorusso, Claudio Paolucci and Patrizia Violi (eds.). *Narratività: temi, analisi, prospettive*. Bologna: Bononia University Press, 279–296.
- Paolucci, Claudio (2012b). Per una concezione strutturale della cognizione: semiotica e scienze cognitive tra embodiment ed estensione della mente. In: Mario Graziano e Consuelo Luvèra (eds.). *Bioestetica, bioetica, biopolitica. I linguaggi delle scienze cognitive*. Messina: Corisco Edizioni, 245–276.
- Paolucci, Claudio (2015). Iconismo primario e gnoseologia semiotica. *Versus. Quaderni di studi semiotici* 120, 135–150.
- Paolucci, Claudio (2017a). *Umberto Eco. Tra ordine e avventura*. Milan: Feltrinelli.
- Paolucci, Claudio (2017b). Eco, Peirce, and the anxiety of influence: the most kantian of thinkers. In: Sara Beardsworth and Rendall Auxier (eds.). *The philosophy of Umberto Eco*. The Library of Living Philosophers: volume XXXV. Chicago: Open Court, 251–278.
- Paolucci, Claudio (2017c). Semiotics, Schemata, Diagrams and Graphs: a New Form of Diagrammatic Kantism by Peirce. In: Kathleen A. Hull and Kenneth R. Atkins (eds.). *Peirce on Perception and Reasoning. From Icons to Logic*. London and New York: Routledge.
- Paolucci, Claudio (2019). Social cognition, mindreading and narratives. A cognitive semiotics perspective on narrative practices from early mindreading to autism spectrum disorders. *Phenomenology and the Cognitive Sciences* 18, 2, 375–400.

- Paolucci, Claudio (2021). *Cognitive semiotics: integrating signs, minds, meaning and cognition*. Dordrecht: Springer.
- Paolucci, Claudio and Fausto Caruana (2019). Per un'etologia semiotica del riso di superiorità. Un'ipotesi pragmatista ed evolucionista. *Reti, saperi, linguaggi, Italian Journal of Cognitive Sciences* VI 2/2019, 243–259.
- Paolucci, Claudio and Fausto Caruana (2020). Riso e Logos. Il riso semiotico come protolinguaggio, tra emozioni e socialità. *Rivista Italiana di Filosofia del Linguaggio*, 66–77. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/608/595> [retrieved November 9, 2023].
- Paolucci, Claudio, Riccardo Fusaroli and Tommaso Granelli (eds.) (2011). The External Mind. Perspectives on Semiosis, Distribution and Situation in Cognition. *Versus. Quaderni di studi semiotici* 112–113.
- Peirce, Charles Sanders. CP. *Collected Papers of Charles Sanders Peirce*, 8 vols., Charles Hartshorne and Paul Weiss (first eds.) (vols. 1–6), Arthur W. Burks (second ed.) (vols. 7–8). Cambridge, MA: The Belknap Press of Harvard University Press, 1931–1958.
- Pennisi, Antonino (1998). *Psicopatologie del linguaggio*. Rome: Carocci.
- Pennisi, Antonino (2021). *Che ne sarà dei corpi? Spinoza e i misteri della cognizione incarnata*. Bologna: Il Mulino.
- Pennisi, Antonino and Alessandra Falzone (2017). *Darwinian Biolinguistics*. Dordrecht: Springer.
- Petitot, Jean (2011). *Cognitive Morphodynamics*. Bern: Peter Lang.
- Pezzini, Isabella (ed.) (2001). *Semiotic efficacy and the effectiveness of the text. From effects to affects*. Brepols: Turnhout.
- Pisanty, Valentina and Stefano Traini (2017). Eco, Kant e l'ornitorinco: vent'anni dopo. *Rivista Italiana di Filosofia del Linguaggio* 11, 1, 1–5. URL: <http://www.rifl.unical.it/index.php/rifl/article/view/410> [retrieved November 9, 2023].
- Polidoro, Piero (2012). *Umberto Eco e il dibattito sull'iconismo*. Rome: Aracne.
- Polidoro, Piero (2015). Umberto Eco and the problem of iconism. *Semiotica* 206, 129–160. URL: <https://doi.org/10.1515/sem-2015-0020> [retrieved November 9, 2023].
- Polidoro, Piero (2019). Image schemas in visual semiotics: Looking for an origin of plastic language. *Cognitive Semiotics* 12, 1, 1–11. URL: <https://doi.org/10.1515/cogsem-2019-2006> [retrieved November 9, 2023].
- Pozzato, Maria Pia (2017). *Visual and Linguistic Representations of Places of Origin*. Dordrecht: Springer.
- Prodi, Giorgio (1977). *Le basi materiali della significazione*. Milan: Bompiani.
- Proni, Giampaolo (2017). *La semiotica di Charles S. Peirce: il sistema e l'evoluzione*. Rome: Aracne.
- Rosch, Eleanor H. (1973). Natural categories. *Cognitive Psychology* 4, 3, 328–350. URL: [https://doi.org/10.1016/0010-0285\(73\)90017-0](https://doi.org/10.1016/0010-0285(73)90017-0) [retrieved November 9, 2023].
- Sykes, John J. (2021). The Lived and the Objective. *InCircolo* 11, 233–254. URL: <https://www.incircolorivistafilosofica.it/wp-content/uploads/2021/07/InCircolo-n.11-11-Sykes.pdf> [retrieved November 9, 2023].
- Traini, Stefano (2017). Umberto Eco's "Negative Realism" and its Glossematic Foundations. In: Torkild Thellefsen and Bent Sørensen (eds.). *Umberto Eco in His Own Words*. Berlin and Boston: De Gruyter Mouton, 276–286.

- Traini, Stefano (2021). *Le avventure intellettuali di Umberto Eco*. Milan: La Nave di Teseo.
- Varela, Francisco, Evan Thompson and Eleanor Rosch (1991). *The Embodied Mind*. Cambridge, MA: The MIT Press.
- Violi, Patrizia (1997). *Significato ed esperienza*. Milan: Bompiani. English translation by Jeremy Carden: *Meaning and Experience*. Bloomington, IN: Indiana University Press 2001.
- Violi, Patrizia (2000). Eco et son référent. In: Jean Petitot and Paolo Fabbri (eds.). *Au nom du Sens. Autour de l'oeuvre d'Umberto Eco*. Paris: Grasset & Fasquelle, 5–26.
- Violi, Patrizia (2003). Embodiment at the crossroads between cognition and semiosis. *Recherches en communication* 19, 199–217.
- Violi, Patrizia (2006). Tokening the Type: meaning, communication and understanding. *Questions on the linguistic sign. Proceedings of the international colloquium*, 9–25.
- Violi, Patrizia (2007). Semiosis without Consciousness? An ontogenetic perspective. *Cognitive Semiotics* 1, fall 2007, 65–86, URL: <https://doi.org/10.1515/cogsem.2007.1.fall2007.65> [retrieved November 9, 2023].
- Violi, Patrizia (2008). Beyond the body: Towards a full embodied semiosis. In: Roslyn M. Frank, René Dirven, Tom Ziemke and Enrique Bernárdez (eds.). *Sociocultural Situatedness. Volume 2*. Berlin and New York: De Gruyter Mouton, 53–76. URL: <https://doi.org/10.1515/9783110199116.1.53> [retrieved November 9, 2023].
- Violi, Patrizia (2012a). Nuove forme di narratività. Permanenza e variazioni del modello narrativo. In: Anna Maria Lorusso, Claudio Paolucci and Patrizia Violi (eds). *Narratività: temi, analisi, prospettive*. Bologna: Bononia University Press, 105–132.
- Violi, Patrizia (2012b). How our Bodies Become Us: Embodiment, Semiosis and Inter-subjectivity. *Cognitive Semiotics* 4, 1, 2012, 57–75. URL: <https://doi.org/10.1515/cogsem.2012.4.1.57> [retrieved November 9, 2023].

Image Sources

Fig. 6. Marco D'Alessandro, *Tarowean – Il giorno delle sorprese*, 2022. Inspired by this research paper. Watercolour on paper. Bologna, Courtesy of the author.

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