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# The encyclopedia in Umberto Eco's semiotics

**Abstract:** In Umberto Eco's semiotics, the encyclopedia is a multidimensional space of semiosis. It is a complex system of shared knowledge that governs the production and interpretation of signs inside communicative contexts. Every semiotic act involves the elements that form the encyclopedia.

By means of several examples and comparisons with different semiotic theories, my paper aims to show how semiosis is governed by semantic categorizations, pragmatic rules, and narrative frames that the encyclopedia articulates and makes operative for interpreters and producers of signs.

**Keywords:** semiosis; Sign; Peirce; structure; interpretation; subject

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## 1 Introduction

Umberto Eco belongs to the generation of scholars who, after the first pioneering research of Charles S. Peirce and Ferdinand de Saussure, provided the basis of studies in the field of *semiotics*. Together with other eminent semioticians, such as Roland Barthes, Algirdas J. Greimas, Louis Hjelmslev, Roman Jakobson, and Yuri Lotman, he participated in the project, the main purpose of which was to build a general and rigorous theory able to explain the mechanisms of signification. In this respect, Eco's semiotics studies the signification of signs and their modes of interpretation and production inside the communicative activities. For Eco, the meaning of signs is not an individual or psychological phenomenon, but the result of a process mediated by shared knowledge: the production and the interpretation of signs involve a wide set of norms and information that belong to a multidimensional system of knowledge, which interpreters and producers share and renew in the communicative practice.

Because of its heterogeneity, Eco calls this system of knowledge *encyclopedia*. As demonstrated in his novel, *The Name of the Rose* (1983), the encyclopedia is akin to an immense library whose books accrue knowledge as it has been represented by cultures of different epochs. However, the library must not simply be

considered an archive. The library is also a space wherein books talk with each other, generate intertextual links, and display possibilities of meaning that can be used in order to produce new signs. Since they appear in the form of signs, the books that form the encyclopedia are semiotic objects that transmit knowledge by means of cultural conventions that guarantee their communicability and that can be used as a paradigm in the processes of signification. The encyclopedia is, thus, also a source of semiotic rules that govern semiosis. It is the space where knowledge shows its rules of functioning and establishes the conditions of interpretation and production of signs. In that sense, the encyclopedia is a multi-dimensional system that works by means of the elements that form it: as Eco himself claims, semiosis is a process that “explains itself by itself” (Eco 1976: 71).

In this essay I intend to demonstrate how the study of signs involves the knowledge registered in the encyclopedia. Towards this aim, I will confine myself to the relationship between the encyclopedic knowledge and the interpretative theory of signs that Eco has developed under the influence of Structuralism, Post-structuralism, and Peirce’s semiotics.

The essay is divided into two sections. In the first section, I will present some notions, such as *code*, *sign-function*, *cultural unit*, and *interpretant*, which ground Eco’s encyclopedic theory of interpretation. In the second section, I will present the ways in which interpreters and producers of signs handle the immense knowledge of the encyclopedia.

## 1.1 Sign-function and code

In the years between *La struttura assente* (The Absent Structure) (1968) and *A Theory of Semiotics* (1976) Eco elaborated the notions of *code* and of *sign-function* in order to study the cultural procedures that underlie *semiosis*. The code is the interpretative, social, and cultural key that governs the *sign-function*, which consists of the correlation of the two sides of the sign: expression and content. In this framework, semiosis is the concrete process wherein someone assigns content to an expression on the basis of a cultural code.

Semiosis is a form of activity that dominates the social and cultural life inside communicative processes. There is also semiosis when, in front of a traffic light, we assign the *content* “stop” to the *expression* “red light” in accordance with the *code* provided by the “traffic regulation.” Against this backdrop, the sign is an element of semiosis since it gives rise, through a code, to the correlative process between expression and content.

This example may raise doubts about the nature of the correlation. The expression seems to belong to a non-semiotic domain since it may be considered

a physical fact. If this were true, then expression and content would be heterogeneous with each other. Conversely, according to Eco, the expression should not be mistaken for what is “sensible” and belongs to the domain of nature. The expression is a semiotic construction: it is a *token* that the interpreter recognizes in the material continuum and associates to a codified *type*, in accordance with the procedure that Eco calls *ratio-facilis* (1976: 122). Therefore, the correlative action takes place after that what is sensible is elaborated as a token of a type that belongs to a codified semiotic system of elements to which it is possible to assign content (1976: 221–224). When, instead, the properties of a sign are not mediated by any codified type, the sign-function takes place if the interpreter segments the material continuum in order to identify the pertinent elements to which it is possible to assign content to them. This procedure, called *ratio-difficilis*, regulates the process of elaboration of new codes (1976: 184) as well as the recognition of signs such as imprints or traces. In any case, from both *rationes* it follows that the expression holds the same semiotic status of the content; therefore, the sign-function takes place between homogeneous elements.

In light of Structuralist theory of Saussure and Hjelmslev, Eco describes expression and content in accordance with a system of relationships, where each element establishes its identity on the basis of its position and difference that it assumes among the other elements of the same system (1976: 38–40). For instance, the expression “red” that we recognized in the traffic light is one of the elements that, with green and yellow, forms the set of possible combinations of the expression form. In the same manner, the content “stop” is one of the elements that with “intersection open” and “proceed with caution” organizes some combinations of the content form. Each set of elements forms a system that exists independently of the possible correlations that can occur in a semiotic process. Indeed, the set of elements of both expression and content are correlated not by their intrinsic properties, but only by the conventional code during the process of the sign-function. As Eco expounds, it follows that “a sign is not a fixed semiotic entity but rather the meeting ground for independent elements (coming from two different systems of two different planes and meeting on the basis of a coding correlation)” (1984: 49). Hence, the correlation between expression and content is potentially open to variations.

Under the influence of Peirce's theory, Eco argues that the correlation is a recursive process that gives rise to a sequence of sign-functions and involves the encyclopedic knowledge. After a first correlation, the content can be assumed to be the expression of further content and so on. The semiotic process is potentially unlimited: it is always possible to reinterpret the elements of the content through further sign-functions.

The peculiarity of this *unlimited semiosis* is that the elements of the content have a relational nature. Let us take again the example of the traffic light: “red” can be linked to “stop,” which in its turn can be correlated with “brake the car.” In turn, “brake the car” is a sign that can be reinterpreted with other signs (“when is green, start”) and so on. Therefore the content of signs is interrelated with other contents the whole of which can give rise a semiotic stream that involved the entire system of knowledge, which Eco calls encyclopedia.

## 1.2 Difficulties with the theory of codes

In order to move toward the study of the encyclopedia, it is necessary to consider some difficulties concerning the notion of code. The term “code” belongs to the old semiotic vocabulary of the first Structuralism. It is still used by semioticians, but over time it has assumed a negative connotation (see Petrilli and Ponzio 2005), since it involves a kind of sign-function that neglects the inferential work of semiosis and drafts a mechanical communicative frame: the content of a sign appears as something that transits from one place to another and the code represents the rule that guarantees this passage. All that concerns the subject, who produces or who interprets signs, is neglected by the sign-function and the code’s conventional rules. Hence, it seems that the code reduces the inferential and cognitive process of semiosis to a sort of rigid substitution – based on the equivalence  $p \equiv q$  – that neglects the variations of meaning.

According to Eco, these difficulties are only in part correct, since every form of decoding always requires the interpreter’s choice of the suitable code. Even when the decoding appears to be a pure substitution there is a trace of interpretation. For instance, the graphic expression “cane” exists in English and in Italian and thus, in order to grasp its content, it is necessary to choose one of the two semiotic systems. Indeed, despite their graphic similarity, in English “cane” means “walking stick,” while in Italian it means “dog.” From this example, it follows that also elementary processes of correlation are not mechanical because they always require the choice of a subject interpreter or producer. As I will demonstrate later, in Eco’s theory the code is a rule that someone hypothesizes in order to assign content to a sign; thus, the code is a part of a complex cognitive activity that involves cultural categories and that cannot be reduced to the elementary inferential model  $p \equiv q$ .

Eco needs the notion of code because it “serves . . . to establish that every cultural production is rule-governed” (1984: 168). This basic assumption is present in all of Eco’s work, including his most recent studies in which the term code no longer appears. Even originality and creativity are not in contradiction with the idea that semiosis is governed by cultural conventions that arise out of the

encyclopedic background of cultures (Eco 2007: 55–61). From a semiotic point of view, also the artistic production is, according to Eco, explainable by means of a sharp investigation of the ways in which a work of art organizes its possibility to mean and, thus, becomes a place of signification where codes are violated, subverted or renewed by new codes (1976: 261–276).

With regard to subjectivity, by carefully reading Eco's main essay, *A Theory of Semiotics*, we can observe that he did not neglect the role of subjectivity, although in the sign-function its activity seems to fade in the correlative action of codes. According to Eco, it is only possible to study subjects in the field of semiotics through the encyclopedic conventions of which they make use. The subjectivity assumes a semiotic identity on the basis of a paradox: it is not the origin of semiosis but rather its effect. This theoretical choice involves the reduction of the centrality of subject: semiotics does not study how subjects sublimate their emotions and their urges in the signification; rather it focuses on the sign's structure and its relationship with cultural codes. The signification is not simply an individual act, because it takes place in the communicative processes and involves conventions shared by a multitude of subjects. The signification is a semiotic strategy that puts into play single subjects through categories that are not individual but social and cultural. Hence, semiotics recognizes subjects only in the cultural processes through the sign-function (Eco 1976: 314–317).

Not all semioticians agree with Eco's decentralization of subjectivity. According to Kaja Silverman, "Semiotics involves the study of signification, but signification cannot be isolated from the human subject who uses it and is defined by means of it, or from the cultural system which generates it" (1983: 3). This proposition, however, mixes up two different points of view on subjectivity: the first one concerns the empirical subject whose modes of investigation regards biology, psychology, etc., but not semiotics; whereas only the second concerns subjectivity as element that participates in the strategy of semiosis; this cultural subject is recognizable insofar as she or he emerges in the correlative processes of the sign-function.

In contradiction to Eco's assumption, some semioticians, as for instance Julia Kristeva, have proposed a comparison between semiotics and psychoanalysis (Kristeva 1980 [1968]). Undoubtedly, semiotics and psychoanalysis share a similar point of view: they both inquire into signs and their content. However, it is essential not to mistake the semiotic content for the repressed content: the former belongs to an intersubjective dimension; it is sharable in the communicative process and it can be studied on the basis of its codification, whereas the second is individual. The repressed content is not codified or, better, there is only a strict subjective codification of the symptoms of neurosis. Therefore, being individual, the signification process of one's neurotic symptoms is not properly governed by the sign-function and thus it is outside the semiotic domain (Eco 1976: 19–21).

As we will see in the final part of this essay, to put the sign at the center of the reflection and not the subject does not mean to exclude or to deny the existence of the latter. In fact, signs cannot produce meanings without an interpretative process. Yet, it is essential to point out that to study the sign in semiotics means to understand its structural mechanism and the way in which this mechanism works for subjects in communicative interactions. Semiotics can study the singularity of the subject as an effect, as something that emerges inside semiosis and thus by means of the rules that govern the sign-function. Therefore, the singularity of each subject depends on her or his participation to the processes of semiosis.

### 1.3 Cultural units

In order to study semiotic processes and to understand the origin of codes, Eco elaborates the notion of *cultural unit*. Roughly, the cultural unit is the content of an expression; however, it does not necessarily have to be embodied in a definition or in a cluster of definitions. It can also be a rule, an operative description of a set of experiences or a stereotypical narrative frame. In general, the fundamental properties of cultural units are i) their potential to be intersubjective and communicable by means of signs, ii) their belonging to a holistic system of relationships governed by a differential and positional principle, and iii) their multi-dimensional nature, since they collect and put in relation knowledge that belongs to different semiotic systems. The cultural unit referable to “Orson Welles,” for instance, involves all the semiotic objects that can be part of the content of that expression. Hence, Welles’s movies are also part of the cultural unit, as well as interviews, pictures or text about him. Cultural units are as pegs on which the members of a community hang all information that can be inferred from the interpretation of an expression against the backdrop of a shared encyclopedia.

However, the information that a cultural unit registers must not be confused with the referent to which a sign can be associated. The notion of cultural unit contradicts the theories of language that ground semantics in the relationship between signs and objects of reality. According to Eco, if the content of a sign were its concrete referent, not all signs would have meaning; terms such as “the,” “unicorn,” and “Christ” should have no meaning because they do not have a referent or a bearer. Nonetheless, semiotics tries to understand why every kind of expression is endowed with a cultural meaning. As Eco explains:

If I declare that “there are two natures in Christ, the human and the divine, and one Person” a logician or a scientist might observe to me that this string of sign-vehicles has neither

extension nor referent – and that it could be defined as lacking meaning and therefore as a pseudo-statement. But they will never succeed in explaining why whole groups of people have fought for centuries over a statement of this kind or its denial. Evidently this happened because the expression conveyed precise contents which existed as cultural units within a civilization. (Eco 1976: 68)

The content of signs neither has an ontological status (although, as we will see later observing Peirce's theory of sign, it holds a form of relationship with reality), nor does it reflect a status of affairs; rather, it is the result of an interpretation mediated by a cultural schema, namely, the cultural unit.

Nevertheless, Eco does not exclude that it is possible to use signs to mention concrete referents. In light of Peter F. Strawson's (1950) account, Eco claims that the reference is not something that a sign does, but something that someone does by using a sign: "From this point of view 'meaning' is the function of a sentence or an expression; mentioning and referring, and truth and falsity, are functions of the use of the sentence or an expression" (Eco 1976: 163). Therefore, signs do not reach any quiddity of referent, because they have only a cultural dimension: only cultural units populate the encyclopedic net of semiotic field. As Eco claims, "every attempt to establish what the referent of a sign is forces us to define the referent in terms of an abstract entity which moreover is only a cultural convention" (1976: 66). For instance, the term "dog" does not refer to any real dog but to a range of encyclopedic knowledge that the cultural unit registers and that allows us to use the expression "dog" inside a communicative frame. Also the image of a dog is not an analogical reproduction of a referent, but it is a combination of those pertinent elements that together allows an interpreter to recognize a dog. These pertinent elements have not an ontological status, since they are semiotic elaborations. In the same way, as we have seen in the examples about "Orson Welles" and "Christ," proper names does not *mean* their bearers, but the information about them, included those that can be used to mention.

At this point we may argue that cultural units are conceptual entities. Nevertheless, these kinds of concepts must not be confused with Platonic entities; the knowledge that the cultural units convey does not depend upon ideal categories. Cultural units are semiotic forms of knowledge categorized in past semiotic processes and organized in holistic terms according to the structural and anti-essentialist principle that characterizes the encyclopedia.

[A cultural unit] is defined inasmuch as *it is placed in a system of other cultural units which are opposed to it and circumscribe it. A cultural unit "exists" and is recognized insofar as there exists another one which is opposed to it. It is the relationship between the various terms of a system of cultural units which substracts from each one of the terms what is conveyed by the others.* (Eco 1975: 73)



It follows that cultural units are interdependent with each other. A cultural unit is not simply a whole of properties that can be analyzed alone, but rather it is a value. In Saussure's terms, every cultural unit expresses a value that depends on both its the opposition with the values of the cultural units of the rest of the system to which it belongs and its possibility to be exchanged with cultural units of other systems (Ferdinand de Saussure 1916: 111–112 and Claudio Paolucci 2005: 215–228). For instance, the value of “red” depends on its opposition either with the value of the elements of its system (yellow, green, black etc.) or the element that belongs to the system of colors of other languages (rosso, rouge, rot, etc.) – although often the lexicalization of the color spectrum differs according to cultures. Furthermore, the value of “red” depends also on its possibility to be exchanged with the values of different systems, for instance the political: thus, “red” can be exchanged with “communism,” namely, a cultural units that is opposed to “liberalism” or “fascism,” which in turn is exchangeable with “black.” Every cultural unit puts into play a multidimensional net of differences and exchanges with a multitude elements that the encyclopedia collects and governs in accordance with the semiotic codes of cultures.

From these first conclusions, some questions arise: which is the origin of cultural units? What is the semiotic status of the properties that they convey? And how do the members of a linguistic community categorize, organize, and share the knowledge of cultural units? In order to answer to these questions, it is necessary to digress briefly into Peirce's theory of sign, since it supports Eco's semiotics and helps us to understand how cultural units register shared knowledge. In particular, Peirce's reflection plays a crucial role by means of the notion of *interpretant*.

## 1.4 The interpretant and the segmentation of the content

In Peirce's theory, semiosis consists of a process among three inter-related elements: the *representamen* (or sign), the *object*, and the *interpretant*. The representamen is any expressive event that grasps our attention and that stands for its object in some respect or capacity; the object is what interpretative action inquires; the interpretant, in turn, is a further sign referring to the relationship between the representamen and its object (CP 2.274).

In his huge mass of writings, Peirce has never drafted a triangle in order to describe the triadic cooperation of semiotic processes. Nevertheless, I think that this representation can provisionally simplify some aspects of his theory. On the left side of Figure 1, the image is the representamen, which stands for the object “dog,” but not in all respects. From the image, we can infer that the dog has four

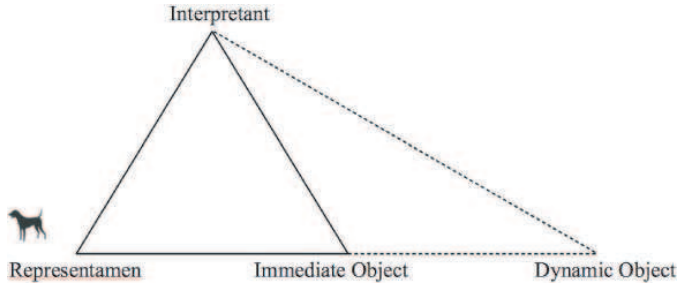


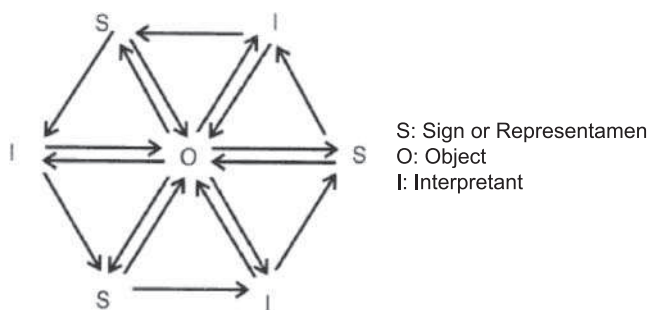
Fig. 1: The semiotic process

legs, a tail, and other features about its shape; thereby the image, as representamen, illuminates the object of “dog” discerning some properties while neglecting others (e.g., that the dog is a domestic animal, that it can be used to hunt, and other information that can be associated with the object “dog”).

In his theory, Peirce uses two ways to define the object: he distinguishes “the *Immediate Object*, or the object as the Sign represents it, from the *Dynamical Object*, or really efficient but not immediately present Object” (CP 8.343). The dynamical object is not necessarily a real object. It is something that precedes our cognitive experience of it and for this reason is essentially the object of human inquiry. But, according to Peirce, there is no way to grasp it entirely and without mediation: every attempt to interpret it involves a representation that discerns among its potential meanings. We experience the dynamical object under a point of view that emerges in the representamen. Under the presence of the representamen, the dynamical object drives us to formulate a meaningful representation of it, namely, an immediate object. Thereby, the immediate object is the way in which the dynamical object is focused by the representamen. It follows that the immediate object does not belong to the external world: it is internal to semiosis.

According to Peirce, the semiotic process can be explained only as a succession of signs (see Figure 2). We understand the relationship between representamen and its object only through a second sign, called interpretant, which illuminates the first in a certain way. An interpretant of the representamen in Figure 1 is, for instance, the term “dog” that I used in this essay in order to explain its meaning. Of course, “dog” is not the only interpretant possible to explain the meaning of the representamen in Figure 1: in accordance with the context or the necessity of interpretation we can select different signs to interpret it.

In this framework, the representamen gives rise semiosis only when a new sign fixes its potential meaning expressed by its object. The interpretant is the semiotic third element that seals the relationship between the representamen and the object.



**Fig. 2:** Schema of unlimited semiosis

Since the interpretant is a sign, it can be further interpreted by another interpretant and so on. This recursive process is potentially unlimited since the semiotic investigation can always discover something more of its object of inquiry. It stops only when it provokes a concrete action that, given its irreducible singularity, cannot be assumed as a sign of something else (CP 5.491). Moreover, as Peirce claims, the reiteration of the same action in front of a similar semiotic event creates a *habit*, namely, a belief, as well as a behavioral disposition, which translates the cognition of a sign into a concrete action upon the world (CP 5.396, 5.487). To clarify, let us again take the image of the dog found on the left side in Figure 1. Understanding it does not provoke a particular investigation; indeed the shape that represents the dog is registered to our habit, and then the interpretation of the shape does not require particular efforts. But if, instead, a real dog suddenly barked at us, we could be surprised and impelled to do something that our habits had not expected; hence, our interpretative activity would be awoken (CP 5.397). We could interpret the barking to mean that a dog could bite us and in that first moment we neglect its other properties, such as its size, color, breed or other properties that are possible to attach to the object “dog.” After the first moments of fear, we would start to produce apt interpretants to face that situation: these first interpretants would be reinterpreted in order to react and understand something more about the object that provokes our cognition. If previously we were focused on neglecting the dog’s size, as the first interpretants become meaningful, they tell us something about the risk that we are running. After the first interpretants we could discover that the dog is in reality one of those small innocuous ones that bark at anyone. This particular experience would form a new habit since the barking of that particular dog would be associated with the previous experience where we inferred that the dog is not dangerous.

As it appears in the example, the production of interpretants allows us to grasp the dynamic nature of the interpretation and clarify the elaboration of the

meaning provoked by a particular event. Hence, the interpretants form the knowledge involved in the semiotic process. The production of interpretants shows the process of categorization of the interpretative experience, since they illuminate the object of inquiry in order to show which properties are pertinent and which ones are not in accordance with a particular context.

Before introducing its relationship with the notions of sign-function and cultural unit, it is necessary to add that the heuristic strength of the notion of interpretant allows us to handle semiosis beyond its empirical producers and outside a mentalist approach. Indeed, according to Peirce, the interpretant does not coincide with a mental fact and it is, at most, considerable as a sign of mental activity. In any case, the interpretant is a sign, and as such its modes of existence can be recognized only in the framework of semiosis (CP 5.473). As Eco argues, in light of his reading of Peirce's theory, "the interpretant is not the interpreter" (1976: 68). Thus, even if its formulation can depend on an empirical interpreter, the interpretant is always a sign that belongs to the semiotic field. Even when the interpretants are rooted in our body, (as for instance the reaction of fright provoked by a dog that barked at us) they participate in semiosis inasmuch as they are translatable into other signs (and the fear of a dog is translated into "danger"). The interpretant is a sign that does not belong essentially to an interpreter, but it is a relational entity that can be studied beyond its producers. Consequently the habits are not simply individual, they can be collective. According to Peirce, "habit is by no means exclusively a mental fact" (CP 5.492). The habits regard a wide set of semiotic acts referable to an individual as well as the members of a community. It follows that the habits can assume a social relevance and be considered a sort of average knowledge, that is a part of the global encyclopedia. Only under this condition it is possible to understand the social nature of semiosis without falling into mentalist *aporiai*.

## 1.5 The encyclopedic format of cultural units

When the interpretants associated with an expression are shared by the members of a community, they form the cultural unit of that expression. The cultural unit is, thus, all of the knowledge that – in form of interpretants – is attachable to an expression and, as we have seen, it is organized in the global encyclopedia in accordance with a differential principle. Because of the relational nature of the interpretants, the cultural unit must not be considered in an atomistic sense. Indeed, different cultural units can share the same interpretants. For instance, both the expressions "dog" and "cat" share interpretants such as "animal," "quadruped," etc. In this way the cultural units are interconnected entities the whole of which collect encyclopedic knowledge.

The cultural units form the system of the encyclopedia by means of Peirce's unlimited semiosis. The interpretants of a cultural unit can be reinterpreted by other interpretants, giving rise to an infinite play. A closed model of this semiotic recursive process is that of the dictionary. A typical dictionary definition of the term "dog" is "carnivorous animal." Both "carnivorous" and "animal" are entries, which refer to other dictionary definitions and thus to other sets of entries. As we can observe, the dictionary meaning of each entry is akin to a cultural unit formed by interpretants that are further interpretable by means of other interpretants. However, the model of the dictionary is close and it only gives us a partial image of the relational system to which cultural units belong, given that it takes into account only linguistic knowledge and neglects world knowledge. Conversely, according to Eco, signs convey a different kind of knowledge: semiosis involves not only linguistic knowledge (cf. Haiman 1980), but also beliefs about the world and social habits.

By means of its multidimensional net of cultural units, the encyclopedia includes the *doxa* that circulates in the communication processes as well as scientific knowledge. In that sense, it pools different levels of competence articulated in local encyclopedias (Violi 1992: 99–113), which the discursive practices build in order to establish a consistent and approximately stable system of certainty that guarantees the intersubjective control of semiotic processes. Indeed, given that it registers texts and knowledge of past epochs, the global encyclopedia can also be contradictory; for instance, the geocentric model and the heliocentric model have the same relevance, because they are forms of knowledge that can be convoked in a new semiotic production. Therefore, the global encyclopedia is an uncoordinated system that collects the knowledge of different epochs and cultures. Hence, the cultural unit of "earth" registers both the heliocentric and geocentric model, as well as all the myths about its creation.

The global encyclopedia does not distinguish good knowledge from bad knowledge: it registers what can be articulated in the content of a sign in all possible contexts. Indeed, according to Eco, semiotics studies the processes of signification of all kinds of texts, including those that lie or contradict scientific knowledge. In fact, for Eco, semiosis does not necessarily reflect any universal truth. Signs have a conventional nature; they don't reflect reality and, thus, they can also be used to lie (Eco 1976: 7). In semiotic terms, good and bad knowledge, truth and lie are semiotic constructions that refer to a specific local encyclopedia and depend on a negotiation among the members of a linguistic community.

The cultural unit is a form of knowledge that arises out of the communicative activity of cultures and its information cannot be reduced to that provided by either dictionary semantics or a closed set of universal codes. As Eco explains:

The encyclopedic content of *dog* would have to include practically all that is and could be known about dogs, even details such as the fact that my sister has a bitch called Best – in short, a knowledge that would be too much even for Borges's Funes el Memorioso. Naturally, it is not quite like this, because we can consider as encyclopedic knowledge only those items that the Community has in some way registered publicly. (Eco 2000 [1997]: 226)

The expression “dog” collects a variety of different meanings that have the semiotic status of interpretants, and that have assumed a conventional value in semiotic practice. As Eco claims, “Any interpretant of a given sign, being in its turn and under other circumstances a sign, becomes temporally a metasemiotic construction acting (for that occasion) as *explicans* of the interpreted *explicatum* and being in its turn interpreted by another interpretant” (1981: 189). Thereby, the multidimensional net of cultural units forms the semiotic paths (called *sememes*) that interpreters and producers have trodden through in their communicative activity, and that covers the encyclopedia's spaces in order to stabilize the possible meanings associated with an expression. Therefore, the cultural unit is the place wherein interpreters and producers find the codes for the sign-function, since it traces through the encyclopedia the possible semiotic paths that ground our semiotic competence to associate a content with an expression. As Eco argues:

The cultural units stand out against society's ability to equate these signs with each other, cultural units are the semiotic *postulate* required in order to justify the very fact that society *does* equate codes with codes, sign-vehicles with meanings, expressions with contents. *Unseen* but *used* by the layman, they are not used but seen by semiotics, which is simply the science of this culturally performed (if unexpressed) competence. (Eco 1976: 72)

By means of the notion of cultural units we understand how the codes are operative rules: they are a form of encyclopedic knowledge that interpreters and producers elaborate in the interpretative process and reuse in the production of signs.

## 2 The structure(s) of the global encyclopedia

As we saw in the past section, in Eco's theory of semiotics, the encyclopedia regulates semiosis inasmuch as each of its components can be used as a code for new correlations. Thereby, the encyclopedic knowledge is the space of semiosis wherein interpreters and producers give rise to the sign-function. As will be demonstrated in this section, every semiotic object, such as a text or a single sign,

is analyzable and understandable as a strategy that involves encyclopedic knowledge. Every new semiotic object that circulates in the communicative interactions is a way to organize the cultural units of the encyclopedia.

The encyclopedia is not only the model that guarantees the regularities of meaning that a community registers in its social habits; the encyclopedic structure also establishes the conditions of renewal of the sign-function. All of the expressions, and even those that seem to stand for a fixed and necessary content, can give rise to new correlations. For instance, the cultural unit of the expression “house” registers in its sememe some encyclopedic information concerning its physical structure. This information can appear “necessary,” since it may be difficult to think of a house without walls and a roof. However, according to the linguistic context, the expression “house” can also generate new correlations that neglect those semantic properties that appear to be necessary. In the metaphorical sentence “the sky is the house of the birds” (Eco 1984: 118–120), we cannot assign to the expression “house” the same meaning that is usually correlated. In fact, in that sentence, the expression “house” seems to posit correlations with a content that contradicts the idea of “delimited space by wall and roof” as it usually means. In order to solve this conundrum, Eco points our attention to the property “shelter” – which is registered in the cultural unit of “house” and, as he argues, is activated in the expression “sky” by the metaphor. In the metaphor, according to Eco, “sky” and “house” share a similar narrative frame based on the property “shelter”: “If man is menaced, what does he do? He takes refuge in his house. If a bird is menaced, it takes refuge in the skies” (Eco 1984: 120). Thus, the metaphor, on the one hand, capsizes and, on the other, reorganizes the meaning of “sky.” The metaphor condensates the properties of “shelter” and “open space” in the cultural unit of “sky,” although they usually appear contradictory in the social habits. In this respect, this metaphor exceeds the dichotomy open/enclosed and subverts the semantic order that usually dictionaries attach to the expressions “sky” and “house.” In a certain sense, this metaphor establishes a sort of semantic contamination: in particular the expression “house” absorbs from “sky” the meaning of “open.” The result is that *the sky is the house of the birds insofar as it consists of an open space that can be their refuge.*

In Eco’s theory, metaphors represents an important semiotic object of analysis, because they demonstrate how the encyclopedia is not a fixed set of semantic norms as is the dictionary, but it is a system that can reshape itself. The encyclopedia is a model open to increase and to reorganize its knowledge in order to produce new texts. The theoretical model that is often used by Eco to describe the multidimensional structure of encyclopedic properties is that of *rhizome*. According to the definition of Gilles Deleuze and Felix Guattari, the rhizome is a structure similar to a net without a center, whose parts are potentially all connected

with each other: “The rhizome connects any point to any other point, and its traits are not necessarily linked to traits of the same nature; it brings into play very different regimes of signs . . . It has neither beginning nor end, but always a middle (milieu) from which it grows and overflows” (Deleuze and Guattari 1987 [1980]: 21).

The rhizome shows that all kinds of connections are provisional. It does not exclude new correlations and thus new possibilities of meaning: every sign of the rhizome can germinate into a new rhizome and thus into new connections which were not previously foreseen in the global encyclopedia. As we previously saw, the expression “house,” in the context of the sentence “the sky is the house of the birds,” produce a rhizome that reformulate its correlation with meanings that its usual interpretation neglects. The rhizome is in fact a structure subjected to conflict: its shape can be determined by the old previous connections; but, when new connections germinate over the old one, the rhizome restructures its shape.

## 2.1 The cooperative activity in the interpretation

The model of the rhizome demonstrates that the global encyclopedia is not governed by universal and immutable principle.<sup>1</sup> It is not possible – and perhaps it is not even necessary – to find the essence or general properties of semiotic systems. Each semiotic object is endowed with a structure formed by its own local and provisional encyclopedic hierarchies of properties. Indeed, each semiotic object is a selection and reorganization of parts of the encyclopedia. A book, a painting, a religious rite, a football game and every circumscribed string of expressions can all be considered semiotic objects, since they select limited parts of the encyclopedia in order to organize their structure and meaning. In turn, a semiotic object is further divisible into smaller parts, even if they belong to different semiotic system: a film, for example, is a syncretic object of analysis since it consists of an editing of shots, music according to a screenplay. In any case, the parts that form an object of analysis are endowed with meaning in accordance with the rhizomatic connections activated by their cultural units.

It follows that the semiotic value of the elements that form the encyclopedia must be considered only on the basis of the rhizomatic connections that past sign

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<sup>1</sup> Eco expresses his critiques against any semantics that support hierarchical semantics in his study on the *Porphyrian tree* (1984: 57–67; 2007: 14–27).



production establishes and authorizes in accordance with the encyclopedia, as a sort of “library of libraries.” Also, the size of a semiotic object is not a priority aspect. Indeed, a single sign, such as a word, condensates the texts in which it can appear. In other terms, since it belongs to the encyclopedic net, a single sign expresses its possible combinations with other elements of the encyclopedia. From this point of view, the meaning of a sign is an instruction – a code – for its textual combinations.

In this account, Eco’s reflection on the *syncategorematic* and the *categorematic terms* is interesting. In Medieval logic, the syncategorematic are all those terms, such as “the,” “instead” or “on,” which have no meaning outside their linguistic context of applicability, since they do not refer to a set of objects, nor do they indicate properties to assign to an object. On the contrary, the categorematic are all those terms, such as “dog,” “Jean-Paul Sartre” or “red,” which are endowed with meaning independently of any context, because they refer to a class of objects or to a set of properties. According to Eco, this subdivision neglects one meaningful feature that both syncategorematic and categorematic share. Let us take, for example, the term “the”: this sign is not completely meaningless, because alone, outside of a sentence, its cultural unit tells us about its possible uses: indeed, “the” cannot be followed by a verb (“*the* plays basketball” is incorrect), but only by a noun, and not in all cases given that “the” indicates a specific noun (“*the* nature is wonderful” is wrong as well). As Eco says, “the meaning of a syncategorematic term is, therefore, a set (a series, a system) of instructions for its possible contextual insertion and for its different semantic outputs in different contexts” (1984: 35). The same point is valid for the categorematic and other kinds of signs. Every expression, since it is included in the encyclopedia, memorizes its contextual insertion since its cultural unit registers its past uses. It follows that signs, since they express cultural units, register the regularity of meaning in the process of communications, and thus the regularity of past contextual insertion on the basis of the intertextual memory of the encyclopedia.

Besides their instructional functions, the encyclopedic properties of the text can also activate a narrative frame. Toward that end, Eco’s semiotics assumes a theoretical point of view close to Algirdas, J. Greimas’s semiotics. Indeed, according to Greimas, single expressions register narrative programs articulable in larger portions of texts. For instance, the expression “fisherman” condenses encyclopedic information relative to the behavior and the ability of fishermen (Greimas 1973: 174). Such knowledge, called *discursive configuration* by Greimas, builds stereotypic narrative frames wherein the fisherman is the actor of possible actions or thematic roles. In Eco’s terms, we can say that the cultural unit of a sign can give rise to a narrative strategy. In front of a novel that starts “Once there was a fisherman,” readers should activate a narrative frame relative to what a fisher-

man usually does. In the course of the reading, this frame will form their expectations and will drive their interpretation.

According to Eco, since it is not governed by any universal hierarchy, the structure of texts must be identified by means of a conjectural processes of interpretation in order to understand its local semantic organization. In that sense, in order to analyze a text, the interpreters have to understand its strategy; they have to discover how the relationships among the parts of the texts generate one or more complex meanings. According to this procedure, the task of interpreters is to carry out a cooperative work that we can divide into two actions that intermingle with each other in the course of the interpretation. First, the interpreters use their own personal encyclopedia from which they choose those meanings that make consistent the combination of the elements as they are organized in the text. Second, the interpreters verify whether their choice is correct and allow the analysis to proceed.

Of course, not all kinds of text are interpretable in the same manner. Some texts – as, for instance, those of crime fiction – are organized in order to provoke expectations that, in the course of the interpretation, will be betrayed by the following parts that the interpreters have to combine with the previous. Other objects of analysis mix signs from different semiotic systems, images, natural languages, music (e.g., a movie). In any case, each interpreter has to use her or his cooperative ability to combine the different encyclopedic variables of textual elements and their contextual insertion.

Cooperative work is a crucial moment of the interpretation, because it puts into play the interaction between the individual – with her or his habits – and the global encyclopedia, and thus between subjective and intersubjective knowledge. However, Eco's interest in individual competence is limited: he takes into account subjective knowledge insofar as it is translatable into signs and takes part in the intersubjective semiotic circuit (2000: 134–136). From this point of view, it does not follow that subjects – producers and interpreters of signs – are deterministically decided by the encyclopedia, although it establishes the whole of rules and codified norms for any semiotic activity. It only means that in order to belong to the semiotic domain, every interpretation or production must be recognizable inside a sharable system of the encyclopedia. Semiotic systems, such as natural languages, cinema or music, allow us to communicate with other people and furthermore to talk about new events, to formulate new sentences and to create new works of art. Hence, the study of the interaction between the single subject and the encyclopedia is fundamental because it shows how it is possible that the encyclopedia, on one hand, guarantees the stability and regularity of meaning and, on the other, allows variations that can be transmitted by means of a sharable code.

## 2.2 Sign-function and Peirce's abduction

In the essays that follow *A Theory of Semiotics*, Eco's theoretical interests gradually shift from the theory of codes to the notion of encyclopedia. However, it is not correct to say that Eco rejects the notion of code: he does not renounce the idea according to which semiosis is a process governed by a codified convention that guarantees the correlation of a content to an expression. The shift from the code to the encyclopedia depends essentially on the necessity to clarify that the correlation is governed by a dynamic process beyond the rigid paradigm of the equivalence  $p \equiv q$ , which Eco identifies in structuralist linguistics. In Eco's theory, semiosis cannot be harnessed by fixed correlations, but it requires an inferential activity (1984: 43).

Nevertheless, it is necessary to point out that Eco's semiotics stems from structuralism and in particular from Hjelmslev's linguistics. However one of the main purposes of his theory is to understand how the categorization of knowledge – provided by the encyclopedia – is a structure involved in the processes of production and interpretation of signs in accordance with an inferential model that exceeds the paradigm of equivalence and studies semiosis as a dynamic process. In that sense, Eco's aim is to combine Hjelmslev's structuralism with Peirce's inferential theory of signs (Eco 2000: 251–254).

On the other hand, the hypotheses on the inferential conception of the sign finds confirmation in ancient semiotics, which Eco has always kept into account for the development of his theory. In *Semiotics and Philosophy of Language*, Eco improves the interpretative mechanism of substitution or equivalence by means of a reflection on the semiotics formulated by the Stoics. The main result of this research is that the original idea of the sign is not governed by the equivalence ( $p \equiv q$ ) between expression and content or by the fixed correlation; rather it is based on the inferential model “if  $p$ , then  $q$ ” (see also Manetti 2000: 157–152).

The epistemological ground of this inferential model is *abduction*, or hypothesis, formulated by Peirce. According to Peirce, “hypothesis is where we find some very curious circumstance, which would be explained by the supposition that it was a case of a certain general rule, and thereupon adopt that supposition” (CP 2.624). As Peirce later shows:

I once landed at a seaport in a Turkish province; and, as I was walking up to the house which I was to visit, I met a man upon horseback, surrounded by four horsemen holding a canopy over his head. As the governor of the province was the only personage I could think of who would be so greatly honored, I inferred that this was he. This was an hypothesis. (CP 2.625)

As it appears in this example, Peirce does not know the rule to explain that fact. He makes a supposition by means of his encyclopedic knowledge. As Eco explains in his reading of this example, Peirce identifies a possible rule inquiring on the cultural unit of “canopy” (1976: 131–132). Peirce knows that “canopy” is conventionally an instrument used by those who are recognized to be important in a certain community, and he used this knowledge as a Rule for his abduction. Therefore, Peirce hypothesizes that “governor” is the Case (*q*) of the Result (*p*), “a man surrounded by four horsemen holding a canopy,” in accordance with the Rule provided by his previous knowledge.

In Eco's theory, abductive inference plays a central role; in particular, it demonstrates that the sign-function is not a mechanical process. The sign-function is an interpretative process that requires the choice or a new formulation of a piece of encyclopedic knowledge in order to explain the passage from expression to content.

## 2.3 Interpretation and production of signs

These reflections on abduction drive us to redefine the dichotomy of interpretation and production; until now, indeed, these two processes appeared separate and without a common theoretical basis. In reality, there is no difference between production and interpretation. Even when we produce a sign, we need to interpret the encyclopedia in order to select those expressions that convey the meanings that we need to transmit. Likewise, when we interpret we produce semiosis, since our action gives rise to a correlative process. Therefore, interpretation and production are parallel processes of every semiotic act.

By eliminating the dichotomy of production and interpretation, we return again to the question of subjectivity. According to the previous descriptions, the semiotic existence of the subjects depends on their correlative activity of the encyclopedic elements. This means that subjects are included in the encyclopedia insofar as, in the abductive process of sign-function, they move in the encyclopedic net (see Violi 2007: 180). As Eco says, “The sign as the locus (constantly interrogated) for the semiotic process constitutes, on the other hand, the instrument through which the subject is continuously made and unmade. The subject enters a beneficial crisis because it shares in the historical (and constitutive) crisis of the sign. The subject is constantly reshaped by the endless resegmentation of the content” (1984: 45).

Hence, the subject in semiotics is neither a psychological unit nor a transcendental subject; rather, it is a cultural subject (see de Lauretis 1984: 158–186) that

emerges in the encyclopedic spaces. This assumption does not mean that the subject is anonymous or deprived of identity. It is true that from Eco's theory we can infer that the encyclopedia, understood as a system that precedes semiotic acts, is something that makes subjects similar to one another; nevertheless, its use, the interpretation – and thus every production – is what makes subjects different from one another.

### 3 Conclusions

The encyclopedia is the intersubjective memory that preserves the knowledge that we use in semiotic processes. Without the encyclopedia, from which we draw on the elements that form our competence, we will not be able to interpret or produce signs, since their mechanism is rule-governed by cultural conventions. This conception of semiosis does not exclude creativity: the norms that drive the sign-function – because they are conventions rooted in the processes of cultures – are always renewable.

Although, as we have seen, it is possible to conceive of the encyclopedia in its global format, it is necessary to point out that its concrete manifestation is always local; a book, the Italian Renaissance or a single clip of a movie expresses its own local encyclopedia in order to communicate meanings: they are signs that circumscribe a specific part of encyclopedic spaces that the interpreters, in order to analyze them, have to reconstruct by means of a correlative action based on abductive inference. Every semiotic activity takes place through the selection and the combination of encyclopedic elements that the members of cultures share. Thus, the encyclopedia is a fundamental instrument to identify the cultural forms that establish the structure of every kind of semiotic object of analysis.

Furthermore, Eco's encyclopedia is also the space where we can verify the correctness of the sign-function. The shape of the global encyclopedia, in its local declinations, allows us to decide which interpretation of a text is not valid or superfluous. The encyclopedia is an intersubjective instrument of semiosis; hence, it does not authorize those interpretations that the shared knowledge assumes as fallacious. This does not mean that a text is closed to new interpretations. The purpose of the encyclopedia is to explain the possibilities of meaning and to put a stop to uncontrolled interpretative drifts. In that sense, the encyclopedia must be always conceived as a site of tension between old and new interpretations. When new interpretations prevail over old ones, the encyclopedia changes its network of relationships.

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## Bionote

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