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Semiotics Today. From Global Semiotics to Semioethics, a Dialogic Response

Abstract:
With this essay the authors project global semiotics into the domain of ethics, or more properly what they propose to call ‘semioethics’, as they explore the priorities of semiotics today. Thanks to its biosemiosic bias, semiotics as it is now practiced internationally, that is, in conjunction with the sciences of culture together with the sciences of nature, not only evidences how body and mind are interconnected, but also offers the central possibility for understanding life on earth in its general complexity and multiplicity. In fact, semiosis, the object of semiotic studies and which according to Thomas A. Sebeok’s axiom converges with life, is the key for understanding the dialogic dialectics between unity and multiplicity in the overall semiobiosphere. This essay is not a straightforward survey of who is currently operating in semiotics and why they are important for the pursuit of knowledge in general. Instead, the aim in a semioethic perspective is to show how a semiotic consciousness is not only integral to understanding developments in the world today, but that it is crucial to the future of the planet.

Index:
1. Global semiotics and the biosphere

Semiotics today owes its configuration as ‘global semiotics’ to Thomas A. Sebeok (1921-2001). By virtue of his ‘global’ or ‘holistic’ approach, Sebeok’s research into the ‘life of signs’ can immediately be associated with his concern for the ‘signs of life.’ From Sebeok’s point of view, *semiosis* and *life* converge. Semiosis originates with the first stirrings of life. This leads to his formulation of an axiom he believed cardinal to semiotics: ‘semiosis is the criterial attribute of life.’ Semiotics provides a point of convergence and observation post for studies on the life of signs and the signs of life.

Sebeok’s global approach to sign life presupposes his critique of anthropocentric and glottocentric semiotic theory and practice. In his explorations of the boundaries and margins of the science or (as he also calls it) ‘doctrine’ of signs, he opens the field to include *zoosemiotics* (a term he introduced in 1963) or even more broadly *biosemiotics*, on the one hand, and *endosemiotics*, on the other (see Sebeok, ‘Biosemiotics. Its Roots, Proliferations, and Prospects,’ in Sebeok 2001b). In Sebeok’s conception, the sign science is not only the ‘science qui étude la vie des signes au sein de la vie sociale’ (Saussure), that is, the study of communication in culture, but also the study of communicative behavior from a biosemiotic perspective.

The general plan of the monumental work in four volumes *Semiotik/Semiotics. A Handbook on the Sign-Theoretic Foundations of Nature and Culture* (edited by Roland Posner, Klaus Robering, Thomas A. Sebeok, 1997-2004), is no doubt the direct expression of Sebeok’s global semiotics. This work offers a representation of the general state of the art, that is to say, of research in theoretical and applied semiotics. This involves
comparing semiotic research to other single disciplines and interdisciplinary approaches which include: medicine, physics, chemistry, biology, psychology, sociology, economics, mathematics, logic, grammar, stylistics, poetics, musicology, esthetics, philosophy, etc. This Handbook (cited in the present essay as S/S, followed by volume and page numbers) studies sign processes in human cultures as well as among non-human animals: their world-view, orientation, perception and communication activities, the metabolism of all living organisms generally, therefore the behavior of all living beings. In relation to human culture this work also deals with social institutions, everyday human communication, information processing in machines, knowledge and scientific research, the production and interpretation of works in literature, music, art and so forth.

The object of study of global semiotics, or semiotics of life, is the *semiosphere*. This term is taken from Jurij M. Lotman (1991) but is understood by Sebeok (‘Global Semiotics’ 1994a, now in Sebeok 2001b) in a far more extended sense than Lotman’s. The latter limited the sphere of reference of the term ‘semiosphere’ to human culture and claimed that communication does not take place outside the semiosphere thus understood (cf. Lotman 1991: 123-124). On the contrary, from the perspective of global semiotics where *semiosis* coincides with *life* (in this sense it is ‘semiotics of life’), the *semiosphere* identifies with the *biosphere*, term coined in Russian by Vladimir Vernadsky in 1926, and emerges therefore as the *semiobiosphere*. Global semiotics is in a position to evidence the extension and consistency of the sign network which includes the *semiosphere* in Lotman’s sense as constructed by human beings, human culture, signs, symbols and artifacts, etc. But *global semiotics* underlines the fact that the semiosphere is part of a *far broader semiosphere*, the *semiobiosphere*, a sign network human beings have never left, and to the extent that they are *living beings*, never will.
2. ‘Semiotics,’ what does it mean?

The expression ‘semiotics’ has another meaning beyond indicating the general science of signs: this expression can also be used to indicate the specificity of human semiosis. Sebeok elaborates this concept in a text of 1989 ‘Semiosis and Semiotics: What Lies in their Future?’ now Chapter 9 of his book A Sign is Just a Sign 1991a: 97-99). Sebeok’s proposal is of crucial importance for a transcendental founding of semiotics given that it explains how semiotics as a science and metascience is possible. Says Sebeok:

Semiotics is an exclusively human style of inquiry, consisting of the contemplation – whether informally or in formalized fashion – of semiosis. This search will, it is safe to predict, continue at least as long as our genus survives, much as it has existed, for about three million years, in the successive expressions of Homo, variously labeled – reflecting, among other attributes, a growth in brain capacity with concomitant cognitive abilities – *habilis, erectus, sapiens, neanderthalensis*, and now *s. sapiens*. Semiotics, in other words, simply points to the universal propensity of the human mind for reverie focused specularly inward upon its own long-term cognitive strategy and daily maneuverings. Locke designated this quest as a search for ‘humane understanding’; Peirce, as ‘the play of musement.’ (Sebeok 1991a: 97)

This meaning of semiotics is implicitly connected with the general plan of the Handbook just mentioned, *Semiotik/Semiotics* (Posner, Robering, Sebeok 1997-2004). In the world of life, which coincides with semiosis (see S/S, 1: 436-37), human semiosis is characterized as *metasemiosis*, that is, as the capacity to reflect on signs. This means to make signs not only the object of interpretation understood in terms of immediate response, but also as reflection on signs, as suspension of response and possibility of
deliberation. This specific human capacity for metasemiosis may also be called ‘semiotics.’ Developing Aristotle’s observation made at the beginning of his *Metaphysics* that man tends by nature to knowledge, we can make the claim that man tends by nature to semiotics (see Petrilli 1998a). Human semiosis or anthroposemiosis is characterized as *semiotics*. Therefore the expression ‘semiotics’ indicates: 1) the study of semiosis, or the general science of signs; and 2) from a specifically human perspective, the capacity that only human beings have to reflect on signs (i.e., to make signs the object of reflection), that is, metasemiosis. Semiotics in this second sense refers specifically to *human* semiosis, or anthroposemiosis. It follows that *Homo* can be described as a ‘semiotic animal’ (see Petrilli and Ponzio 2005; Deely, Petrilli and Ponzio 2005).

3. Semiotic materiality and interpretation

Semiosis is an event whereby something functions as a sign. The following passage from Article 1, by Roland Posner, ‘Semiotics and Its Presentation,’ §2 in *Semiotik/Semiotics* presents a standard definition of sign:

We therefore stipulate that the following is a necessary and sufficient condition for something to be a semiosis: $A$ interprets $B$ as representing $C$. In this relational characterization of semiosis, $A$ is the interpreter, $B$ is some object, property, relation, event, or state of affairs, and $C$ is the meaning that $A$ assigns to $B$. (*S/S*, 1: 4)

In terms of a Peircean definition, $A$ is the *Interpretant* that some interpreter uses to relate $B$, the Representamen, to $C$, the Object.

According to Sebeok (1994b: 10-14), both the Object (O) and the Interpretant (I) are Signs. Consequently, we may rewrite O as $S_{0n}$ and I as $S_{in}$. Both the first and second distinction are resolved in two types of signs (Ibid.: 33-36).

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In our opinion, the sign is firstly an interpretant (cf. Petrilli 1998a: I.1; Petrilli and Ponzio 2002a, b, and 2005) in accordance with Peirce who reformulated the classic notion of substitution, in the medieval expression *aliquid stat pro aliquo*, in terms of interpretation.

In fact, Peirce’s definition of the sign includes what we call the *interpreted* sign, on the side of the object, and the *interpretant*, in a triadic relation where the interpretant is what makes the interpreted sign possible through mediation of the sign or representamen. The interpreted becomes a *sign* component because it receives an interpretation. But the interpretant in turn is also a sign component with a potential for engendering a new sign. Therefore, where there is a sign, there are immediately two, and given that the interpretant can engender a new sign, there are immediately three, and so forth as conceived by Peirce with his notion of *infinite semiosis*, which describes semiosis as a chain of deferrals from one interpretant to another.

To analyze the sign beginning from the object of interpretation, that is, the interpreted, means to begin from a secondary level. In other words, to begin from the object-interpreted means to begin from a point in the chain of deferrals, or semiosic chain, which cannot be considered as the starting point. Nor can the interpreted be privileged by way of abstraction at a theoretical level to explain the workings of sign processes. An example: a spot on the skin is a sign insofar as it may be interpreted as a symptom of sickness of the liver: this is already a secondary level in the interpretive process. At a primary level, retrospectively, the skin disorder is an interpretation enacted by the organism itself in relation to an anomaly which is disturbing it and to which it responds. The skin disorder is already in itself an interpretant response.

To say that the sign is firstly an interpretant means that the sign is firstly a response. We could also say that the sign is a reaction: but only on the condition that by ‘reaction’ we understand ‘interpretation’ (similarly to
Morris’s behaviorism, but differently from the mechanistic approach. To avoid superficial associations with the approaches they respectively recall, the expression ‘solicitation-response’ is preferable with respect to the expression ‘stimulus-reaction.’ Even a ‘direct’ response to a stimulus, or better solicitation, is never direct but ‘mediated’ by an interpretation. Unless it is a ‘reflex action,’ the formulation of a response involves identifying the solicitation, situating it in a context, and relating it to given behavioral parameters (whether a question of simple types of behavior, e.g., the prey-predator model, or more complex behaviors connected with cultural values, as in the human world).

The sign is firstly an interpretant, a response through which, on the one hand, something else is considered as a sign and becomes its interpreted, and which, on the other, may engender an infinite chain of signs.

In sum, in Peirce’s view, semiosis is a triadic process and relation whose components include sign (or representamen), object and interpretant. ‘A Sign, or Representamen, is a First which stands in such a genuine triadic relation to a Second, called its Object, as to be capable of determining a Third, called its Interpretant, to assume the same triadic relation to its Object in which it stands itself to the same Object’ (CP 2.274). Therefore, the sign stands for something, its object ‘not in all respects, but in reference to a sort of idea’ (CP 2.228). However, a sign can only do this if it determines the interpretant which is ‘mediately determined by that object’ (CP 8.343): semiosis is action of sign and action on sign, activity and passivity. ‘A sign mediates between the interpretant sign and its object’ insofar as it refers to its object under a certain respect or idea, the ground, and determines the interpretant ‘in such a way as to bring the interpretant into a relation to the object, corresponding to its own relation to the object’ (CP 8.332).

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Thanks to ‘semiotic materiality’ (see Petrilli 1986, 2003, 2005) the interpreted object is endowed with alterity, therefore it has its own sign consistency and capacity to resist with respect to any given interpretation. The interpretant sign must take the interpreted sign and its alterity into account and adjust to it. The implication is that what is interpreted and consequently becomes a sign – whether it be an utterance, a whole line of conduct (verbal and nonverbal), a written text, a dream, or a somatic symptom – does not lie at the mercy of a single interpretant. The interpreted is open to many possible interpretations and is therefore the place where numerous interpretive routes intersect.

Semiotics must reflect upon the conditions of possibility of what Edmund Husserl calls the already given, already done, already constituted, already determined world. Critical analysis of the world with a view to alternative planning requires such reflection. Our claim is that semiotics today carries out the general task of what Husserl calls constitutive phenomenology. As he clearly demonstrates in Erfahrung und Urteil [Experience and Judgement], 1948, the aim of constitutive phenomenology is to clarify the entire complex of operations leading to the constitution of a possible world. To investigate how the world is constituted means to deal with the essential form of the world in general and not our real actual existent world. This means to investigate the modeling structures and processes of the human world not simply in terms of factuality, reality and history but also in terms of potential and possibility. Such an investigation is also specific in the sense that it deals with a species-specific modality of constructing the world. In fact, unlike other animals, the human animal is capable of constructing innumerable possible worlds. With Sebeok the human modeling device of the world may be indicated with the expression ‘language.’ Such a capacity is specific to the human species, in fact unlike all other species only humans are able to construct innumerable real or
imaginary, concrete or fantastic worlds, and not just a single world (cf. Sebeok 1991a).

4. The dialogic nature of sign
The interpretant of a sign is another sign which the first sign creates in the interpreter, ‘an equivalent sign, or perhaps a more developed sign’ (CP 2.228). Therefore the interpretant sign cannot be identical to the interpreted sign; it cannot be a repetition, precisely because it is mediated, interpretive and therefore always new. With respect to the first sign, the interpretant is a response, and as such inaugurates a new sign process, a new semiosis. In this sense it is a more developed sign. As a sign the interpretant determines another sign which acts, in turn, as an interpretant: therefore, the interpretant opens to new semioses, it develops the sign process, it is a new sign occurrence. Indeed, we may state that every time there is a sign occurrence, including the ‘First Sign,’ we have a ‘Third,’ something that is mediated, a response, an interpretive novelty, an interpretant. This confirms our statement that a sign is constitutively an interpretant. The fact that the interpretant (Third) is in turn a sign (First), and that the sign (First) is in turn an interpretant (is already a Third) contextualizes the sign in an open network of interpretants according to the Peircean principle of infinite semiosis or endless series of interpretants (cf. CP 1.339).

Therefore, the meaning of a sign is a response, an interpretant that calls for another response, another interpretant. This implies the dialogic nature of sign and semiosis (see also Cobley 2007b). A sign has its meaning in another sign which responds to it and which in turn is a sign if there is another sign to respond to it and interpret it, and so forth ad infinitum. In our terminology (see Ponzio 1985, 1990; Petrilli and Ponzio 2005) the ‘First Sign’ in the triadic relation of semiosis, the object that receives meaning
mediated by the sign, is the *interpreted*, and what confers meaning is the interpretant which may be of two main types.

The interpretant allowing for recognition of the sign is an identifying interpretant, and as such is connected with the signal, code and sign system. The specific interpretant of a sign, that which interprets its actual sense, is the answering comprehension or responsive understanding interpretant. This second type of interpretant does not limit itself to identifying the interpreted, but rather expresses its properly pragmatic meaning, installing with it a relation of involvement and participation: the interpretant responds to the interpreted and takes a stand toward it.

This bifocal conception of the interpretant is in line with Peirce’s semiotics, which is inseparable from his pragmatism. In a letter of 1904 to Victoria Welby, Peirce wrote that if we take a sign in a broad sense, its interpretant is not necessarily a sign, but an action or experience, or even just a feeling (cf. *CP* 8.332). Here, on considering the interpretant as not being necessarily a sign, Peirce is using the term ‘sign’ in a strict sense. In fact the interpretant understood as a response that signifies, that renders something significant and that consequently becomes a sign cannot be anything else but a sign occurrence, a semiosic act, even when a question of an action or feeling. In any case, we are dealing with what we are calling an answering comprehension or responsive understanding interpretant, and therefore a sign.

5. Organisms and semiosis

In his article ‘The Evolution of Semiosis’ in *S/S*, I, Sebeok discusses the question ‘what is semiosis?’ citing Morris (1971 [1946]: 253), who defined semiosis as ‘a process in which something is a sign to some organism.’ This definition implies effectively and ineluctably, says Sebeok, that in semiotic
processes there must be a living entity, which means that there could not have been semiosis prior to the evolution of life.

For this reason one must, for example, assume that the report, in the King James version of the Bible (Genesis I: 3), quoting God as having said ‘Let there be light,’ must be a misrepresentation; what God probably said was ‘let there be photons,’ because the sensation of perception of electromagnetic radiation in the form of optical signals (Hailman 1977: 56-58), that is, luminescence, requires a living interpreter, and the animation of matter did not come to pass much earlier than about 3,900 million years ago. (S/S, I: 436)

Let us return to Morris’s definition. ‘Signs,’ says Morris, ‘are therefore described and differentiated in terms of the dispositions to behavior which they cause in their interpreters’ (1971 [1946]: 75).

6. Semiosis as semiosis of life, or biosemiosis

In ‘The Evolution of Semiosis’ Sebeok discusses the question of the cosmos before semiosis and after the beginning of the Universe with reference to the regnant paradigm of modern cosmology, that is the Big Bang theory. Before the appearance of life on our planet – the first traces of which date back to the so-called Archaean Aeon, from 3,900 to 2,500 million years ago – there were only physical phenomena involving interactions of nonbiological atoms and, later, of inorganic molecules. Such interactions may be described as ‘quasi-semiotic.’ But the notion of quasi-semiosis must be distinguished from that of ‘protosemiosis’ as understood by the Italian oncologist Giorgio Prodi (1977) (Biosemiotics, a milestone volume edited by Sebeok and Umiker-Sebeok 1991, is dedicated to Prodi who is described as a ‘bold trailblazer of contemporary biosemiotics’). In fact, in the case of physical phenomena the notion of ‘protosemiosis’ is only a metaphorical
expression. In Sebeok’s view, semiosis can only be attributed to that which concerns life. He distinguishes nonbiological interactions from ‘primitive communication’ which refers to transfer of information-containing endoparticles, such as exists in neuron assemblies where such transfer is managed in modern cells by protein particles.

Since there is not a single example of life outside our terrestrial biosphere, the question of whether there is life/semiosis elsewhere in our galaxy, let alone in deep space, is wide open. Therefore – says Sebeok – ‘exobiology semiotics’ and ‘extraterrestrial semiotics’ are necessarily twin sciences that so far remain without a subject matter (cf. S/S, 1: 437).

In the light of present-day information, all this implies that at least one link in the semiosis loop must necessarily be a living and terrestrial entity. This may simply be a portion of an organism or even an artifactual extension fabricated by a human being. Semiosis is after all terrestrial biosemiosis. A pivotal concept in Sebeok’s research as much as in the Semiotik/Semiotics handbook is that semiosis and life converge. On one hand semiosis is considered as the criterial feature that distinguishes the animate from the inanimate, on the other, sign processes have not always existed in the course of development of the universe: sign processes and the animate originated together with the development of life. To identify semiosis and life means to invest semiotics with a completely different role from that conceived by Umberto Eco (1975) when he refers to ‘the inferior threshold of semiotics.’ In this book Eco formulates an oversimplifying interpretation of semiotics which he reduces to a cultural science, therefore to a mere sector of semiotics. Instead in Sebeok’s research semiotics is interpreted and practiced as a life science, therefore as biosemiotics (see also Cobley 2000, 2004a).

This conception of semiosis as biosemiosis is the topic of Article 119, ‘Biosemiose’ [‘Biosemiosis’] by Thure von Uexküll in S/S (Chapter III: 447-456; see also ‘Varieties of Semiosis’ by Uexküll in Sebeok and Umiker-
Sebeok, eds., 1991: 455-470; and Sebeok, Hoffmeyer, and Emmeche, eds., 1999). In this article, Th. von Uexküll distinguishes between three different kinds of semiosis on the basis of the different roles carried out by emitter and receiver. Th. von Uexküll calls these three kinds of semiosis:

1) **semiosis of information or signification**;
2) **semiosis of symptomatization**;
3) **semiosis of communication**.

In *semiosis of information or signification* we have an inanimate environment acting as a ‘quasi-emitter’ without a semiotic function. The receiver, i.e., a living entity, a living system, which renders what it receives meaningful via its receptors, must perform all semiotic functions. In *semiosis of symptomatization* the emitter is a living being that sends out signals through its behavior which are not directed to a receiver and do not anticipate an answer. The receiver receives signals which are signs called ‘symptoms.’ In *semiosis of communication* signs are specially emitted for the receiver and must be received, that is, interpreted with the meaning intended by the emitter (cf. S/S, 1: 449-450).

### 7. Typologies of semiosis

As anticipated, these three types of semiosis are distinguished on the basis of the role played by emitter and receiver. In our terminology and in accordance with Peirce, the distinction can be reformulated in terms of the difference in role carried out by what we identify as the interpretant sign and the interpreted sign. We can say that

1) the *interpreted* becomes a *sign* only because it receives an interpretation from the interpretant which is a response (*semiosis of information*);

2) before being interpreted as a sign by the interpretant, the interpreted is already an interpretant response (*symptom*). However, it
does not arise for the sake of interpretation as a sign (semiosis of symptomatization);

3) before being interpreted as a sign by the interpretant, the interpreted is an interpretant response which calls for interpretation as a sign, i.e., it calls for another interpretant response (semiosis of communication).

To reformulate Th. von Uexküll’s typology of semiosis (based on ‘emitter’ and ‘receiver’ participation) in terms of the different ways in which ‘interpreted’ and ‘interpretant’ participate in the interpretation process presents a series of advantages. We believe that our reformulation:

a) emphasizes the role of the interpretant in semiosis;

b) explains the meaning of ‘the inanimate quasi-interpreter’ in semiosis of information or signification, precisely in terms of the ‘interpreted-non-interpretant.’ Instead, in semiosis of symptomatization the interpreted is an interpretant-interpreted, which does not arise for interpretation as a sign. And in semiosis of communication the interpreted is an interpreted-interpretant, which instead is a sign;

c) identifies semiosis with the capacity for interpretation, i.e., for response;

d) confirms the importance of the pragmatic dimension in semiosis;

e) is in line with Th. von Uexküll’s definition of biosemiotics as ‘interpretation of interpretation,’ or, in a word, ‘metaintepretation.’

Semiosis of information or signification, semiosis of symptomatization, and semiosis of communication are founded on a specific type of modeling characteristic of a specific life form. The capacity of a species for modeling is an a priori for processing and interpreting perceptual input in species-specific ways. Therefore, we can say with Sebeok:
As Peirce (CP 1.358) taught us, ‘every thought is a sign,’ but as he also wrote (CP 5.551), ‘Not only is thought in the organic world, but it develops there.’ Every mental model is, of course, also a sign; and not only is modeling an indispensable characteristic of the human world, but also it permeates the entire organic world, where, indeed, it developed. The animals’ milieu extérieur and milieu intérieur, as well as the feedback links between them are created and sustained by such models. A model in this general sense is a semiotic production with carefully stated assumptions and rules for biological operations. (Sebeok 1991a: 57)

8. The ‘semiosic matrix’ and centrality of the interpretant
Th. von Uexküll’s model is so broad as to include sign processes from microsemiosis and endosemiosis to semiosis of higher organisms through to human semiotic metainterpretation. This model covers most of the complete catalogue of elements postulated for semiosis in Article 5, ‘Model of Semiosis,’ in Semiotik/Semiotics, by Martin Krampen (S/S, I: 248).

Krampen’s semiosic matrix is centered on the notion of interpretant. In fact, as we have already stated, the interpretant mediates between solicitation (interpretandum) and response (signaling behavior or instrumental behavior). In Peirce’s view mediation distinguishes semiosis from mere dynamical action – ‘or action of brute force’ – which takes place between the terms forming a pair. Instead, semiosis results from a triadic relation. It ‘is an action, or influence, which is, or involves, a cooperation of three subjects, such as a sign, its object, and its interpretant,’ nor is it ‘in any way resolvable into action between pairs’ (CP 5.484). The interpretant neither occurs in physical phenomena nor in nonbiological interactions. In other words, it does not occur in the inorganic world. Consequently, Morris defines semiosis as ‘a process in which something is a sign to some organism’ (1971 [1946]: 336). In light of our previous statements this
definition should not only be interpreted in the strict sense of whole organisms, but also in the broad sense of any living being or living system whatsoever.

In the article ‘Models of Semiosis,’ the semiosic matrix is also used to discuss the various types of semioses postulated in the history of semiotics. Consequently, the famous ‘functional cycle’ described by Jakob von Uexküll (1982) – this ‘pivotal model,’ this ‘simple albeit not linear, diagram,’ which ‘constitutes a cybernetic theory of modeling so fundamental that the evolution of language cannot be grasped without it (Sebeok 1994b: 122) – may be represented with the semiosic matrix.

9. Signs, dialogue and the ‘semiosic matrix’

Dialogue too is illustrated graphically with the semiosic matrix (S/S, I: 260). Krampen maintains that dialogue commences with signaling behavior from a sender that intends to communicate something about an object. However, what is left out of consideration is that the ‘if ... then’ inference, hypothesis formation, and ‘chain of thought’ are dialogic structures in themselves. Contrary to Krampen’s view, for the ‘if ... then’ model or ‘chain of thought’ to have a dialogue form, it is not necessary that the ‘if ... then’ model should ‘combine with the dialogue model’ as when ‘the semiosis of the former type triggers a signaling behavior,’ nor that the ‘chain of thought’ should occur in the organisms of the participants’ (S/S, I: 260).

In inference, in the hypothetical argument, and in the chain of interpreted and interpretant thought-signs generally, dialogue is implied in the relation itself between the interpreted sign and the interpretant sign (cf. Ponzio 1985, 1990, 1997b; Petrilli and Ponzio 2005; Ponzio 2006). The degree of dialogism is minimal in deduction, where the relation between the premises and the conclusion is indexical: here, once the premises are accepted the conclusion is obligatory. In induction, which too is characterized by a unilinear inferential process, the conclusion is
determined by habit and is of the *symbolic* type: identity and repetition dominate, though the relation between the premises and the conclusion is no longer obligatory. By contrast, in abduction the relation between premises and conclusion is *iconic* and is dialogic in a substantial sense. In other words, it is characterized by high degrees of dialogism and inventiveness as well as by a high-risk margin for error. To claim that abductive argumentative procedures are risky is to say that they are mostly tentative and hypothetical with only a minimal margin for convention (symbolicity) and mechanical necessity (indexicality). Therefore, abductive inferential processes engender sign processes at the highest levels of otherness and dialogism. Thus we may say that ‘abductive reasoning’ is at once ‘dialogic reasoning.’

The relation between sign (interpreted) and interpretant, as understood by Peirce, is a *dialogic* relation. We have already evidenced the *dialogic nature of sign and semiosis*. In *semiosis of information or signification* (Th. von Uexküll), where an inanimate environment acts as a ‘quasi-emitter’ — or, in our terminology, where the *interpreted* becomes a *sign* only because it receives an interpretation by the interpretant, which is a response – receiver interpretation is dialogic. Therefore, dialogue is present not only in *semiosis of communication* (Th. von Uexküll), where the interpreted itself, before being interpreted as a sign by the interpretant, is already an interpretant response calling for interpretation as a sign; but also in *semiosis of symptomatization* (Th. von Uexküll), where the interpreted is already an interpretant response (*symptom*) which, however, does not arise specifically for interpretation as a sign; and again in *semiosis of information or signification*. Dialogue does not commence with signaling behavior from a sender intending to communicate something about an object. The whole semiosic process is dialogic. ‘Dialogic’ may be understood as *dia-logic*. The *logic* of semiosis as a whole is a *dia-logic*. The
interpretant as such is ‘a disposition to repond’ (S/S, 1: 259), the interaction between a sender and receiver is dialogic.

Krampen’s semiosic matrix in fact confirms the connection between dialogue and semiosis. It shows that the two terms coincide not only in the sense that dialogue is semiosis, but also in the sense that semiosis is dialogue, an aspect which Krampen does not seem to contemplate. The dialogue process presented in the semiosic matrix is similar to the ‘if ... then’ semiosic process, to hypothesis formation, chain of semioses, chain of thought, and functional cycle after Jakob von Uexküll. In the article by Krampen, the semiosic matrix illustrates dialogue with two squares which represent the two partners, that is, sender and receiver, where each has its own rhombus representing the interpretant. In spite of this division, the graphic representation of dialogue is not different from the author’s diagrams representing other types of semiosis. It could be the model, for example, of an ‘if ... then’ semiosis in which the two distinct interpretants are the premises and the conclusion of an argument in a single chain of thought.

10. Dialogue and the ‘functional cycle’

Jakob von Uexküll’s ‘functional cycle’ is a model for semiosic processes. As such it too has a dialogic structure and involves inferences of the ‘if ... then’ type which may even occur on a primitive level, as in Pavlovian semiosis or as prefigurements of the type of semiosis (where we have a ‘quasi-mind’ interpreter) that takes place during cognitive inference.

In the ‘functional cycle’ the interpretandum produced by the ‘objective connecting structure’ becomes an interpretatum and (represented in the organism by a signaling disposition) is translated by the interpretant into a behavioral disposition, which triggers a behavior onto the ‘connecting structure.’ The point is that in the ‘functional cycle’ thus described a dialogic relation is established between an interpreted
(interpretandum) and an interpretant (interpreted by another interpretant, and so forth), which is not limited to identifying the interpreted, but rather establishes an interactive relation with it.

Vice versa, not only does the ‘functional cycle’ have a dialogic structure, but dialogue in communication understood in a strict sense can also be analyzed in light of the ‘functional cycle.’ In other words, the dialogic communicative relation between a sender that intends to communicate something about an object and a receiver may, in turn, be considered on the basis of the ‘functional cycle’ model. The type of dialogue in question here corresponds to the processes described by the ‘functional cycle’ as presented in *semiosis of communication*, to use Th. von Uexküll’s terminology, and not in *semiosis of information or signification* nor in *semiosis of symptomatization*. In the case of *semiosis of communication* the interpreted itself, before being interpreted as a sign by the interpretant, is already an interpretant response addressed to somebody, another interpretant, to be identified and to receive the required *answering comprehension interpretant*.

The autopoietic system theory is incompatible with a trivial conception of dialogue, whether based on the communication model which describes communication as a linear causal process moving from source to destination, or on the conversation model governed by the turning around together rule. The autopoietic system also calls for a new notion of creativity. Otherwise, one may ask with Winfried Nöth (1985, Eng. trans.: 180): ‘how are processes such as creativity and learning compatible with the principle of autonomous closure?’ Following Humberto Maturana (1978: 54-55), we can claim that creativity and dialogic exchange should be conceived as ‘pre- or anticommmunicative interactions’ as opposed to communication understood as a linear process from source to destination or as a circular process in which the participants take turns in playing the part of sender and receiver.
11. Dialogism and biosemiosis. A nonnegligible contributor to semiotics

The sign theory developed by Mikhail M. Bakhtin and his ‘Circle’ is rooted in the concept of ‘dialogism.’ Though this aspect of sign models is presented in _Semiotik/Semiotics_, it is not duly analyzed in this particular Handbook. Bakhtin’s semiotic conception is dealt with by Rainer Grübel in Article 114 (‘Der Russische Formalismus’ [‘Russian Formalism’], Chapter XII, ‘Current Trends in Semiotics,’ _S/S_, 2: 2233-2248) together with other topics including Vladimir Propp, Lev S. Vygotskij, Gustav Špet, Bakhtin and his Circle and Russian Formalism. Other Russian contributions to the study of signs, such as those by Roman Jakobson, Nikolaj Trubetzkoj, Jurij M. Lotman and the Moscow-Tartu School, are suitably treated in Article 115, ‘Prague Functionalism’ (by Thomas G. Winner), Article 116, ‘Jakobson and Structuralism’ (by Linda Waugh), and Article 118, ‘Die Schule von Moskau und Tartu’ (‘The Moscow-Tartu School,’ by Michael Fleischer) (in the same chapter, _S/S_, 2: 2016-2339).

According to Bakhtin dialogue consists of the fact that one’s own word alludes always and in spite of itself, whether it knows it or not, to the word of the other. Dialogue is not an initiative taken by self. One human being does not enter into dialogue with another out of respect, but rather and predominantly in spite of the other, by imposition from the other. This emerges very clearly, as Bakhtin demonstrates, in the novels of Dostoevsky. Even a person’s identity is dialogic. As we read in the entry ‘Dialogism’ in _Encyclopedia of Semiotics_, a fine volume edited by Paul Bouissac, 1998 (referred to in this essay as _ES_), ‘even the self cannot coincide with itself, since one’s sense of the self is essentially a dialogic configuration’ (_ES_: 192). The authors then quote a statement made by Bakhtin in ‘Discourse in the Novel’ (1934, in Bakhtin 1981: 341): ‘The ideological becoming of a human being ... is the process of selectively assimilating the words of others’ (_ES_: 192). They also quote a statement by Voloshinov (1973: 86): ‘word is a two-
sided act. It is determined equally by whose word it is and for whom it is meant. As word, it is precisely the product of the reciprocal relationship between speaker and listener, addressee and addressee,’ with the comment that ‘communication is grounded in dialogism’ (ES: 192).

We may explicate this relation by saying that both word and self are dialogic in the sense that they are passively involved with the word and self of the other. Self is implied dialogically in otherness, just as the ‘grotesque body’ (Bakhtin 1965) is implied in the body of the other. In fact, dialogue and body are closely interconnected. Bakthin’s dialogism cannot be understood separately from his biosemiotic conception of sign on which basis he criticizes both subjective individualism and objective abstraction. According to Bakhtin, there cannot be dialogism among disembodied minds. Unlike platonic dialogue, and similarly to Dostoevsky, for Bakhtin dialogue is not only cognitive and functional to abstract truth. Rather, it is a life need grounded in inevitable entanglement of self with other.

Dialogue is not a synthesis of multiple points of view. On the contrary, it is refractory to synthesis. Therefore, Bakhtin opposes dialogue to unilinear and monologic dialectics. Dialogism emerges here as another configuration of logic which contrasts with both formal logic and dialectic logic and their monologic perspective. All this is excellently expressed by the authors of the entry ‘Dialogism’ (ES: 192) when they say that the term ‘dialogic’ must be understood not only as dialog-ic but also as dia-logic:

Understood in this way, dialogism undercuts the hegemonic assumption of a singular, rational form of logic. Bakhtin does not accept the linear, theleological trajectory of simplistic dialecticism, particularly the assumption that synthesis is actually ever realizable. Final and absolute agreement is not possible. Even the self cannot coincide with himself, since one’s sense of the self is essentially a dialogic configuration. (ES: 192)
We believe that interpretation of the term ‘dialogic’ as ‘dia-logic’ validates our conviction (discussed elsewhere) that Bakhtin’s main interpreters – Holquist, Todorov, Krysinsky, Wellek, etc. – have all fundamentally misunderstood Bakhtin and his concept of dialogue (cf. Ponzio’s presentation to the 1997 Italian translation of Bakhtin 1929). And this is confirmed by the fact that they compare Bakhtin’s concept of dialogue to its formulation by Martin Buber, Jean Mukařovský, Plato. Above all, they all understand dialogue in the abused sense of encounter, agreement, convergence, compromise, synthesis. From this point of view it is symptomatic that Todorov (1981) replaced the Bakhtinian term ‘dialogue’ with ‘intertextuality,’ and ‘metalinguistics’ with ‘translinguistics.’

Intertextuality reduces dialogue to a relation among utterances, while translinguistics (which unlike linguistics focuses on discourse rather than on language, i.e., langue), reduces the critical instance of metalinguistics to a sectorial specialization. This approach minimizes the revolutionary capacity of Bakhtin’s thought – if it does not completely annul it! The ‘Copernican revolution’ operated by Bakhtin on a philosophical level and by Dostoevsky on an artistic level, concerns the human being as he is involved with his entire life, needs, thoughts, and behavior in the life of others, not only the human other, but all living beings.

By contrast with Kant’s ‘critique of pure reason’ and Sartre’s ‘critique of dialectic reason,’ Bakhtin inaugurates a ‘critique of dialogic reason.’

Consciousness implies a dialogic relation including a witness and a judge. This dialogic relation is not only present in the strictly human world but also in the biological. Says Bakhtin:

When consciousness appeared in the world (in existence) and, perhaps, when biological life appeared (perhaps not only animals, but
trees and grass also witness and judge), the world (existence) changed radically. A stone is still stony and the sun still sunny, but the event of existence as a whole (unfinalized) becomes completely different because a new and major character in this event appears for the first time on the scene of earthly existence – the witness and the judge. And the sun, while remaining physically the same, has changed because it has begun to be cognized by the witness and the judge. It has stopped simply being and has started being in itself and for itself ... as Well as for the other, because it has been reflected in the consciousness of the other ... . (Bakhtin 1970-1971: 137)

For Bakhtin dialogue is the embodied, intercorporeal expression of involvement of the body (which is only illusorily an individual, separate, and autonomous body) with the body of the other. This is most adequately expressed with the image of the ‘grotesque body’ (cf. Bakhtin 1965) in popular culture, in vulgar language of the public place, and above all in the masks of carnival. This is the body in its vital and indissoluble relation to the world and to the body of others. The shift of focus from identity (whether individual, as in the case of self-consciousness, or collective, that is, a community, historical language, or cultural system at large) to alterity is a sort of Copernican revolution in itself (see Ponzio 1997a). With such a shift Bakhtinian critique of dialogic reason interrogates not only the general orientation of Western philosophy, but also the dominant cultural tendencies that engender it.

12. The biological basis of Bakhtinian dialogue and ‘great experience’
In human beings architectonics becomes an ‘architectonics of answerability,’ a semiotic consciousness of ‘being-in-the-world-without-alibis.’ Such consciousness can be limited to relatively small spheres – the single individual’s restricted life environment, family, professional group,
work group, ethnic group, religious group, cultural group generally, contemporaneity –, or it can be extended as ‘global semiotic’ consciousness (to recall Sebeok’s terminology) to the whole world in a planetary, or solar, or even cosmic sense (as auspicated by Victoria Welby). Bakhtin distinguishes between ‘small experience’ and ‘great experience.’ The former is narrow-minded experience. Instead:

... in the great experience, the world does not coincide with itself (it is not what it is), it is not closed and finalized. In it there is memory which flows and fades away into the human depths of matter and of boundless life, experience of worlds and atoms. And for such memory the history of the single individual begins long before its cognitive acts (its cognizable ‘Self’). (Bakhtin’s ‘Notes of 1950,’ in Bakhtin 1996: 99. Eng trans., our own)

In 1926 Bakhtin authored an article entitled ‘Contemporary Vitalism,’ published in two parts in the popular scientific Russian journal *Man and Nature* (Nos. 1 and 2), in which he discusses the biological and philosophical subject. This article appeared under the name of the biologist I. I. Kanaev, but Bakhtin’s authorship of ‘Contemporary Vitalism’ has never been disputed. Even if this article is not mentioned in the entry on Bakhtin included in *Encyclopedia of Semiotics*, it is an important tessera for the reconstruction of Bakhtin’s thought since his early studies. Similarly to the biologist Jakob von Uexküll, Bakhtin too develops an early interest specifically in biology relatedly to the study of signs. The article on vitalism was written during a period of frenzied activity for Bakhtin during the years 1924-29, in Petersburg, then Leningrad. And during this productive period of his life Bakhtin also published four books, on different subjects (Freud, Russian Formalism, philosophy of language, Dostoevsky’s novel). Only the
last was published under his name, instead the others (together with several articles) were signed by Voloshinov or Medvedev.

Bakhtin’s life in Leningrad was very difficult. As he became seriously ill (with osteomyelitis) he qualified for a state pension which, however, was meager. Bakhtin lived in Kanaev’s apartment for several years, from 1924 until 1927, where with his wife he occupied a big but sparsely furnished room described by Kostantin Vaginov, another friend from the ‘Bakhtin Circle,’ as follows: ‘Two motley blankets / Two shabby pillows / The beds stand side by side! But there are flowers in the window [...] Books on the narrow shelves / And on the blankets people / A pale, bluish man / And his girlish wife’ (Vaginov, ‘Dva pestrykh odejala...,’ quoted in Clark and Holquist 1984: 99).

Kanaev contributed to Bakhtin’s interest in biology.

Thanks to Kanaev, Bakhtin, as he says in a note to his text ‘Forms of Time and the Chronotope in the Novel’ (1937-38, in Bakhtin 1981: 84), attended a lecture on the ‘chronotope’ in biology in the summer of 1925, held by the Leningrad physiologist Ukhtomsky. This lecture influenced Bakhtin’s conception of the chronotope in the novel. And as Bakhtin further clarifies, ‘in the lecture questions of aesthetics were also touched upon.’ Ukhtomsky was also an attentive reader of Dostoevsky. From his novel the Double he derived his conception of the double’s ghost as an obstacle to understanding the interlocutor.

Bakhtin owes his dialogic view of the relation between body and world to the biological research of his time (such as Ukhtomsky’s). According to this view, the body and world are related dialogically such that the body responds to its environment modeling its world.

From this perspective Bakhtin’s research can also be associated with Jakob von Uexküll’s reseach in biology. The latter is named in Bakhtin’s text on ‘Contemporary Vitalism’ as one of the representatives of vitalism. In reality, Uexküll did not subscribe unconditionally to vitalism, and was also
critical of behavioristic and mechanistic approaches. As he stated in his book of 1934 (cf. J. Uexküll 1967), he was not interested in how the organism-machine works, but rather in how the driver works. And Uexküll too searched for an explanation to life in the sign.

Uexküll and Bakhtin both dealt with the question of life from a semiotic perspective. Even though Bakhtin increasingly focused his attention on problems connected with the literary sign, his dialogism is conceived in the context of research in biology, physiology (precisely the study of the central nervous system – Petersburg was one of the world centers in this field), physics, as well as in psychology and psychoanalysis. In particular, Bakhtin’s concept of dialogism can only be understood (similarly to Uexküll’s research in biology) in light of the tradition of thought that leads to contemporary biosemiotics (cf. Article 110, S/S, 2: 2189-2190).

In ‘Contemporary Vitalism’ Bakhtin critiques vitalism (which theorizes a special extramaterial force in living beings as the basis of life processes), with special reference to Henry Bergson and the biologist Hans Driesch. Driesch stated the difference between life and non-life and interpreted the organism’s homeostasis in terms of radical autonomy from its surrounding environment. On the contrary, in his own description of the interaction between organism and environment, Bakhtin opposes the dualism of life force and physical-chemical processes and maintains that the organism forms a monistic unit with the surrounding world.

In his works of the 1920s Bakthin critiques both the vitalists and the reflexologists, as well as both Freudianism and mechanistic materialism (for instance, the mechanistic view of the relation between base and superstructure). In Bakhtin’s view, each of these different trends are vitiated by false scientific claims which underestimate the dialogic relation between body and world, which results in either dematerializing the living body or physicalizing it in terms of mechanistic relations. Bakhtin’s reflection on signs is fundamental to such a critique. Reference to signs
contributes to an understanding of living and psychic processes as well as of historical-cultural relations, such as that between base and superstructure. Another contribution to an adequate understanding of these processes ensues from replacing both unilinear and conclusive mechanical dialectics with the dialogic model. Jakob von Uexküll’s research develops in the same way. For both Bakhtin and Uexküll the process under examination is a semiosic process. Though Uexküll does not use the dialogic model explicitly, we now know it is central to his famous ‘functional cycle.’

13. Dialogism and intercorporeity

By contrast with oversimplifying and suffocating interpretations of Marxism, Bakhtin works on Marx’s idea that the human being only comes to full realization when ‘the reign of necessity ends.’ Consequently, a social system that is effectively alternative to capitalism is one which considers free time, available time, and not work time, as the real social wealth (see Marx 1974 [1857]). In Bakhtin’s language this is the ‘time of non official festivity,’ which is closely connected to the ‘great time’ of literature. These aspects are theorized in his 1965 monograph on Rabelais which plays a central role in the general architectonics of his thought system.

Global communication in today’s world is dominated by the ideology of production and efficiency. This is in complete contrast with the carnival worldview. The world of global communication is also characterized by individualism to an exasperated degree and by the logic of competition. Production, efficiency, individualism, competition represent dominant values in today’s society. All the same, the structural presence of the grotesque body, the condition of intercorporeity, involvement of the body with the body of others, cannot be ignored. The human being’s vocation for the ‘carnivalesque’ has resisted. Literary writing testifies to this. In Orwell’s 1984, the ultimate resistance to a social system dominated by the values of
production and efficiency is offered by literature. In this sense we may say that literature (indeed art in general) is and always will be carnivalized.

Modeling and dialogism are pivotal concepts in the study of semiosis. Communication, information or signification, and symptomatization are all forms of semiosis that presuppose modeling and dialogism. This is particularly evident if, in accordance with Peirce (who reformulated the classic notion of substitution in terms of interpretation), the sign is considered as an interpretant, that is, a dialogic response foreseen by a specific type of modeling.

14. Binarism, triadism, and dialogism

The alternative in semiotics is not between binarism and triadism, but between monologism and polylogism.

Concerning binarism, the scope of semiotic enquiry transcends the opposition between a Saussurean/Hjelmslevian/Greimasian approach and a Peircean approach (for the first, see Article 101, ‘Saussure and his Followers,’ by Svend E. Larsen, and Article 117, ‘Hjelmslev and Glossematics,’ by Jørgen D. Johansen, and Article 119, ‘Greimas and his School,’ by Hermann Parret, S/S, 2: 2272-2289, 2300-2311; for the second approach, see Article 100, ‘Peirce and his Followers,’ by Helmut Pape, and the entry ‘Semiotic Terminology,’ ES: 570). These two approaches seem to oppose binarism to triadism. However, Sebeok’s global semiotics as much as the volumes forming Semiotik/Semiotics confirm our opinion that the heart of the matter does not lie in opposition between binarism and triadism.

The significant opposition from our point of view is that between a sign model that tends to oversimplification with respect to the complex process of semiosis and a sign model that does justice to the different aspects and factors of the process by which something becomes a sign. This is not merely a question of an empty triadic form, but rather of specific
contents constituting Peirce’s triadism, that is, the categories forming his triadism, his sign typologies, and the dynamic nature of his model, which describes signs as grounded in **renvoi** from one interpretant to another. These categories include ‘firstness,’ ‘secondness,’ and ‘thirdness,’ the triad ‘representamen,’ ‘interpretant,’ and ‘object,’ characterization of the sign on the basis of symbolicity, indexicality, and iconicity. All these aspects evidence the **alterity** and **dialogism** constitutive of signs from a semiotic perspective. Peircean logic is dialogic though the merit is not in the triadic formula in itself. In fact, Hegelian dialectic abstracts triadism from the constitutive dialogism of sign life, giving rise to a form of dialectic that is metaphysical, abstract and monological. (The entry ‘Binarism’ in *Encyclopedia of Semiotics*, oddly proposes Hegelian philosophy as a means of overcoming the theory of binary opposition in Lévi-Strauss’s structuralism, cf. ES: 81). In his 1970-71 notebooks, Bakhtin describes how Hegelian monological dialectic is formed, showing how it actually originated from a vital dialogic sign context. The process consists in taking out the voices (division of voices) from dialogue, eliminating any (personal/emotional) intonations, and thus transforming live words into abstract concepts and judgements, so that dialectic is obtained in the form of a single abstract consciousness. Peirce himself also took a stand against the systemic skeleton of Hegelian analysis, against dialectic understood as a kind of hypochondriac search for an end, that is, as oriented unilaterally instead of being open and contradictory (on the relation between dialogue and dialectic in Peirce and Bakhtin, see Bonfantini and Ponzio 1986; Bonfantini, Petrilli and Ponzio 2006).

### 15. Language and writing

Sebeok maintains that language was exapted for communication ‘into speech, and later still, into other linear manifestations, such as script (S/S, 1: 443; see also Sebeok 1986, 2001a, b). We have proposed a distinction
between ‘script’ or ‘transcription’ and ‘writing’ (Petrilli and Ponzio 2003a and 2005), which we believe is as important as that between language and speech. The term ‘writing’ can be used to indicate that characteristic of language (understood as human modeling) designated by Sebeok with the term ‘syntax.’

Without distinguishing between script and writing – writing avant la lettre – it is not possible to free the mind from the widespread prejudice that in today’s society writing is overwhelmed by other sign forms. Part of this prejudice is the thesis that nowadays the image dominates over writing, as though all forms of human sign production were not as such forms of writing. The fact is that we have a restricted view of writing. Accordingly, writing is identified with the transcription of oral language, which it merely registers, appearing as a sort of outer cover, subaltern and ancillary with respect to orality.

Thus considered writing is no more than mnemotechny (as in Plato). Such a restricted view is not only connected to the preconceived idea of the primacy of the oral word, of the phoné, and therefore to a prejudicial phonocentric order. It is also connected to a prejudicial view of an ethnocentric order. From this perspective, writing – reduced to the status of transcription – would wrongly seem to be the prerogative of certain social systems and not others. It is described as representing a fundamental stage in human history, a discriminating factor between prehistory and history, between ‘cold’ societies devoid of history and ‘warm’ societies endowed with history, capable of evolution and historical memory.

Writing understood as transcription is connected to ‘culture’ in a narrow sense. According to this narrow sense of culture, a society that does not have writing-transcription is described as a ‘nonculture.’ In this context the ‘person of culture’ is the person who is capable of writing-transcription with all ensuing implications relating to the detention of power and consolidation of relations of dominion of one human being over the other.
Instead, writing understood as a species-specific capacity characterizes ‘culture’ in a broad sense, in an anthropological sense. From this perspective writing is contrasted to ‘nature’ and characterizes the human being as such.

In reality, the invention of writing as transcription presupposes writing understood in a far more complex sense, and in a far broader temporal sphere than man’s historical-cultural evolution. Writing as we understand it concerns the very process of homination, that is, the formation and evolution of the human species. Writing is a human species-specific modeling device through which the human being, resorting to various means – including the body or external physical means –, organizes experience as well as surrounding reality both spatially and temporally conferring sense and constructing whole worlds. The human being is capable of inventing new senses and constructing different worlds with the same means and elements. All animal species construct their own worlds in which things assume a given sense; the distinctive feature of the human species lies in the capacity to confer different senses upon the same elements, even limited in number, and to construct a plurality of possible worlds.

Thus intended the capacity for writing, ‘ante litteram’ writing, writing antecedent to the written sign, to transcription, represents a fundamental stage in the homination process antecedent to speech which is privileged with respect to other – even earlier – means of communication. Writing thus understood is not a means of communication like speaking and its transcription, but rather precedes and is the foundation of all forms of communication.

The development of speech and relative verbal sign systems, that is, (historical-natural) languages, presupposes writing. Without the capacity for writing man would not be in a position to articulate sounds and identify a limited number of distinctive features, phonemes, to reproduce.
phonetically. Without the capacity for writing, humans would not know how to assemble phonemes in different ways so as to form a great multiplicity of different words (monemes or morphemes), nor would they know how to assemble words syntactically in different ways so as to form utterances that are always different, expressing ever different meanings and senses.

And when, as in the case of deaf-mutes, the development of language in the phonic form is impossible, writing – if adequately solicited – finds other possibilities of expressive development (gesture, drawings). Writing-modeling-language in the deaf-mute allows for noteworthy development of the language capacity unaccompanied by speech.

We are witnessing today a great development in languages which are continuously growing and proliferating thanks to technological development as well as to encounter and exchange among different cultures (the closing of frontiers and assertion of community identity cannot block such encounter and exchange which obviously goes far beyond exchange at the level of the market). In the present era, writing, understood in a broad sense (as described above), has greater possibilities of manifesting itself in different ways. Thanks to language thus understood, photography, cinema, television, video-cassettes, computers offer new writing possibilities and increase our capacity for the ‘play of musement’. Furthermore, traditional forms of expression such as theatre, music, the figurative arts may now resort to new developments in technology to invent new forms of writing, each within its own sphere, but also through a process of reciprocal contamination and formation of new expressive genres. Presentday picture writing, design, photographic writing, film writing, musical writing can be reconsidered in this new light and viewed as representing a high level in the manifestation and development of the creative need of writing understood as the human capacity for language.
There is no question of the crisis of writing. No other historical era has ever been so rich in writing as the present. *We are now living in the civilization of writing.* And this fact should be stated emphatically to anyone who confounds writing and the written sign, writing and transcription, only to complain – through ignorance or for ideological reasons – about the ‘loss’ or ‘debasement’ of ‘writing.’

These days what we especially need is a commitment to achieving the right conditions for the spread and free growth of writing systems, delivering them from any form of subjection to whomever holds control over communication. This is the real problem for education in writing. It is not a question of falsely opposing ‘writing’ to the ‘image’ in current forms of communication, but of the objective contradiction between continuing increase and expansion of writing, languages, the free ‘play of musement’ and increasing control over communication, which is ever more concentrated in the hands of a few.

Literary writing is another important place, and perhaps the earliest, where writing attains independence from transcription, that is, where the written sign attains independence from its ancillary function with respect to oral language, therefore where writing is no longer reduced to mnemotechny. Today other forms of writing are developing and supplementing the work of literary writing.

Literary writing is disengaged. This means that literary writing is disengaged with respect to the obligations that characterize other writing genres where writing is understood as transcription. Such disengagement frees literary writing from relative responsibility, special responsibility, that is, from responsibility limited by alibis. Disengagement from (technical) partial and relative responsibility invests literary writing with the type of responsibility that knows no limits, with absolute responsibility, unlimited responsibility. This type of responsibility, moral responsibility (Bakhtin), delivers the human being from all that may obstacle the free manifestation
of what characterizes humans in their specificity as human beings. Our allusion is to language understood as the human potential for the infinite play of constructing – and deconstructing – new possible worlds. ‘Play’ and not ‘work’ insofar as play is rendered independent of need, is an excess in relation to functionality, productivity, therefore it is external to the ‘reign of necessity’ (Marx).

As writing and not transcription, literary writing is refractory to any form of power that may obstacle it (see Orwell 1949). As a slogan from 1968 recites, the only form of power recognized by literary writing is imagination: nonfunctional, unproductive, freely creative imagination, similarly to that attributed to God. The human lies in this vocation for divinity thanks to the capacity for language, that is, for writing-modeling.

16. Syntactics, semantics, and pragmatics

In his epochal volume of 1938, Foundations of the Theory of Signs, Charles Morris introduced an important tripartition into semiotics (he prefers the term ‘semiotic’), that which distinguishes between three branches of semiosis: syntactics, semantics and pragmatics (see Chapter II, ‘Systematik,’ in Semiotik/Semiotics, Articles 2-4, respectively by Posner, Klaus Robering, and again Posner, S/S, 1: 246; see also Petrilli 1999b, 2000a, b, c, and 2001a). However, the historical origins of these branches can be traced back to the artes dicendi, i.e., grammar, rhetoric, and dialectic, taught as part of the so-called trivium in Medieval European schools.

Morris’s trichotomy is related to Peirce’s distinction between speculative grammar, critical logic (the successor of dialectic) and methodeutic (the successor of rhetoric) (cf. CP 1.191ff and 2.93). Peirce reinterpreted the artes dicendi as branches of semiotics and systematized these as disciplines that treat signs as Firstness, Secondness, and Thirdness, respectively (cf. S/S, 1: 4). In this sense, semiotics consists of three
subdisciplines: ‘speculative grammar,’ which gives us a physiognomy of forms, a classification of the function and form of all signs; ‘critic,’ the study of the classification and validity of arguments (in turn divided into three parts: the logic of abduction, induction and deduction); and ‘methodeutic,’ the study of methods for attaining truth. Pragmatism, which is based on the thesis that the meaning of a sign can be explicated by considering its practical consequences as the response of an interpretant, is a methodeutic theory in Peirce’s sense (cf. Article 100, ‘Peirce and his followers,’ S/S, 2: 2020).

As observed by Posner (cf. S/S, 1: 4), although Morris’s trichotomy is related to Peirce’s, it also refers to three leading philosophical movements of his time: Logical Positivism, Empiricism, and Pragmatism. In *Foundations of the Theory of Signs*, the three branches of semiotic identified by Morris – syntactics, semantics, and pragmatics – correspond respectively to three *dimensions of semiosis*, the syntactical, the semantical and the pragmatical.

According to a tradition that goes back to Michel Bréal’s *sémantique* (1897) understood as ‘the science of significations,’ meaning is generally associated with the semantical dimension of semiosis. On the contrary, however, meaning is present in all three dimensions including the syntactical and pragmatical, and to state that it belongs uniquely to the semantical is the result of a misunderstanding. When Morris claims that syntactics deals with relations among signs, this does not exclude that it involves meaning, which too is part of the relation among signs. Similarly, as much as pragmatics focuses on the relation of signs to interpreters, as says Morris, it too deals with signs and therefore with meanings (cf. Rossi-Landi 1994 [1972] which includes his paper of 1967, ‘Sul modo in cui è stata fraintesa la semiotica estetica di Charles Morris’).

To restrict meaning to the semantical dimension of semiosis instead of tracing it throughout all three dimensions is to reduce the sign totality to one of its parts only, in the case of semantics to the relation of designation.
and denotation. Similarly, the relation of the sign to other signs does not only concern the syntactical dimension in a strict sense to the exclusion of the pragmatical and the semantical. Just as the relation of the interpreter to other interpreters does not uniquely concern the pragmatical dimension to the exclusion of the syntactical and the semantical. Each time there is semiosis and, therefore, a sign, all three dimensions are involved and are the object of semiotics.

17. Syntactics and syntax

‘Syntactics’ covers the syntactical aspects of signs, their formal aspects, relations and combinations, including texts, pieces of music, pictures, industrial artifacts, and so on. As specified in this essay and in accord with observations anticipated above in our discussion on ‘syntax’ (in Sebeok’s sense), in linguistics, such aspects as phonology, syntax (in the strict sense) and the morphology of natural language all fall under syntactics. Syntactics includes morphology as well as syntax.

An example of syntactics as the study of combination rules to form complex signs is, in Posner’s view (cf. S/S, 1: 33-37), Chomsky’s transformational grammar which studies rules of transformation from ‘deep structures’ to ‘surface structures.’

This distinction (introduced in Chomsky 1965), as well as the previous between ‘nuclear’ and ‘non-nuclear sentences’ (Chomsky 1957), is connected with a questionable conception of language and knowledge and with an equally questionable method of analysis (cf. Ponzio 1973, 1997b: 313-320, 2001). The limits of Chomsky’s approach to linguistics, though not signaled in Semiotik/Semiotics, inevitably emerge in light of a Peircean and Morrisian approach to the study of signs.

Chomsky sees no alternative to vulgar linguistic behaviorism (such as Skinner’s), beyond appealing to the rationalistic philosophy of the seventeenth century, and taking sides with mentalism and innatism. That
the Chomskyan conception of language remains tied to the classical alternatives between consciousness and experience, rationalism and empiricism is not without negative consequences for a theory of language, even with respect to such a specialized branch as syntax. In this sense, Chomsky's approach is alien to Kantian criticism as much as to Edmund Husserl, Peirce, Ernst Cassirer, Maurice Merleau-Ponty, Morris, etc. (see 5/5, 2: 1430-1431).

Unlike Chomsky's dichotomy between linguistic competence and experience, in modern conceptions after Kant experience is described as a series of interpretive operations. These include inferential processes of the abductive type (Peirce) through which the subject completes, organizes, and associates data which are always more or less fragmentary, partial, and discrete. In such operations, experience is innovative and qualitatively superior by comparison with the limited nature of eventual input. After all, experience coincides with competence. What Chomsky (1986) baptized 'Plato’s problem' is a consequence of the false dichotomy between competence and experience as well as of the ensuing conception of experience as a passive state of the subject.

Morris’s concepts of syntactics and of syntax (which, as anticipated, is part of syntactics) are connected with semantics and pragmatics. Instead, Chomsky separates syntax – which, similarly to Carnap, he does not distinguish from syntactics – from semantics and pragmatics. Moreover, Chomsky confuses levels of analysis, mistaking the description of objects of analysis for the construction of models of analysis. In this sense, Chomsky’s linguistics is a unigradual linguistic theory which, unlike Rossi-Landi’s (1998 [1961]) ‘methodics of common speech’ (see Ponzo 1988 and 1990) or Shaumyan’s (1970 [1965]) bigradual theory of generative grammar, fails to distinguish between the genotypical level and the phenotypical level.

Chomsky’s error is no different from that made by Oxonian analytical philosophy. The Oxonian philosophers claimed to describe
ordinary, daily, or colloquial language in general, but in reality they were
describing the characteristics of a given natural language. Confusion
between two levels, the general and abstract level of language, on the one
hand, and the particular and concrete level of a given language at a given
moment in its historical development, on the other, is recurrent – and not
only in the Oxonian conception or in more recent analyses of language
inspired by the latter. Chomskyan generative grammar also mistakes the
specific characteristics of a language – yet again English – for the universal
structures of human language. The untranslatability of sentences used by
Chomsky as examples of his analyses is symptomatic of the problem at
hand. The transformational model proposed by Chomsky confuses
elements which, in fact, belong to two different degrees of abstraction,
ideal language and natural language.

Thus Chomskyan grammar with its methodologic suppositions and
dualism between competence and experience and between deep
structures and surface structures, would not seem to offer a suitable
example of syntactics as understood by Posner in accord with Morris’s
approach to semiotics. As a branch of syntactics which studies combination
rules applied to verbal form complexes, we propose an ‘interpretive
linguistic theory’ able to ‘generate’ (in Chomsky’s sense) an utterance in
terms of its relation to another utterance that interprets it, an utterance
that acts as interpretant. All utterances are engendered, that is, produced,
identified and characterized by their interpretants. According to this
approach, the interpretant of a ‘sentence’ (the dead cell of a linguistic
system) or, as we prefer, ‘utterance’ (the live cell of discourse) is not a
deep structure grounded in underlying elementary sequences, but another
verbal sign. An interpretant identifying an utterance or any verbal sign
whatever is simply ‘unexpressed’ until the conditions are realized for its
expression, ‘explicitation.’ We have introduced the expression

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‘identification interpretant’, better ‘identifying interpretant’ for this type of interpretant which identifies the verbal sign

a) in its phonemic or graphic features;

b) in its semantic content;

c) in its morphological and syntactic physiognomy.

Given that the three dimensions of semiosis (syntactical, semantical and pragmatical) are inseparable, the interpretant engendered by an utterance or any verbal sign whatever is not only an identifying interpretant. It is also an ‘answering comprehension interpretant’ which has a special focus on the pragmatical dimension of signs. Without the answering comprehension interpretant, it is difficult or even impossible to recognize the sign at the level of phonemic or graphemic configuration, morphological and syntactic structure, as well as semantic content (cf. Ponzio 1990, 1997b, 2001; Petrilli and Ponzio 2005).

Just as we have highlighted the presence of syntactics in all aspects of signs, in the same way we must underline that the question of meaning (i.e., of the relation between interpreted and interpretant) is also present at the level of identification of the units composing words, phrases, utterances and texts.

18. Semantics: referent as designatum and denotatum

Concerning the semantic dimension in sign theory, we must signal the important contribution made by Morris relatedly to the referent. At a certain point in the recent history of semiotics, referential semantics was contrasted to nonreferential semantics. The starting point of the debate was what was to become the famous but deviating triangle with its distinction between the three apexes denominated ‘symbol,’ ‘thought or reference’ and ‘referent,’ proposed by Charles K. Ogden and Ivor A. Richards in 1923. Influenced by Saussure’s binary conception of sign as the
relation of a signifiant to a signifié, meaning was described by Ogden and Richards as the relation of a ‘symbol’ to ‘thought or reference’.

The question under debate was whether the ‘referent’ should be eliminated or not from this triangle. Supporters of nonreferential semantics included Stephen Ullmann (1951, 1962) and Umberto Eco (1975). Subsequently, Eco (1984) recovered the concept of referent and did so implicitly through the Jakobsonian concept of renvoi.

In any case, if we accept Morris’s distinction between designatum and denotatum the question of the referent and its misunderstandings are easily solved. This distinction was originally proposed by Morris in his 1938 book, *Foundations of the Theory of Signs*.

‘Where what is referred to actually exists as referred to the object of reference is a denotatum,’ says Morris (1971: 20). For example, if the sign ‘unicorn’ refers to its object considering it as existent in the world of mythology, that sign has a denotatum since unicorns do exist in mythology. On the contrary, if the sign ‘unicorn’ refers to its object considering it as existent in the world of zoology, that sign does not have a denotatum since unicorns do not exist in zoology. In this case the sign has a designatum (Morris 1938), or a significatum, as Morris (1946) was later to call it (see below), but it does not have a denotatum. ‘It thus becomes clear that, while every sign has a designatum, not every sign has a denotatum’ (1971 [1938]: 20). By using Morris’s distinction between designatum and denotatum misunderstandings relative to the referent can in fact be avoided.

In other semantic theories, the referent is eliminated altogether on the basis of the fact that what the sign refers to does not always exist in the terms referred to by the sign. In this case the designatum is obviously not taken into account. On the contrary, as we have amply demonstrated (Petrilli 1999b, 2000a, b, c, 2001a; Petrilli and Ponzio 1998, 2005), the sign
has a referent always, or in Morris’s terminology, a designatum, and if this referent exists in the terms referred to by the sign, it also has a denotatum.

The object of reference, referent, or object in Peirce’s sign triad, is no doubt a component of semiosis. In *Man as a Sign*, Ponzio (1990: 33-36) describes the referent as an implicit interpretant. In other words, the referent of a sign is another sign to which the former refers implicitly. Once explicited, the referent changes position and becomes an interpretant with an explicative function; while the sign which had a referent, i.e., the sign with implicit meaning, becomes an interpreted.

Referent (object), interpretant, and interpreted (representamen, sign vehicle) are, therefore, three different functions carried out by the sign. A referent is an implicit part of an interpretive route that the explicit part (interpretant) refers to. It is impossible to explicit all interpretants of a sign given that they are infinite (Peirce’s ‘infinite semiosis’). It follows that all signs have a referent (implicit interpretant) as well as a meaning (explicit interpretant). Meanings (and therefore signs) without a referent do not exist. Consequently, that the referent, or object of reference, is a component of semiosis, means that the referent is not external to sign reality, even if as a ‘dynamical object’ it is external to a current semiosis. It is not possible to refer to something without this something becoming part of an interpretive route, i.e., without it being an implicit interpretant or an interpreted. Referents are not external to the sign network.

19. Pragmatics
Morris defined pragmatics as the study of the relations of sign vehicles to interpreters or more simply as the relations of signs to their users (1938). Unlike Rudolf Carnap (1939) who restricted the field of pragmatics to verbal signs only to include nonlinguistic signs much later (1955), Morris’s conception of pragmatics concerns both verbal and nonverbal signs. John L. Austin (1962) and John Searle (1969) also limited their interest in the
pragmatic dimension to verbal signs. On the contrary, Morris goes so far as to include the ethic and esthetic dimensions as well. Morris’s interest in the relation of signs to values is closely connected with pragmatics which deals with the relation of signs to interpreters. Speech act theory (cf. the entry, ‘Speech Act Theory,’ by Alec Machoul, ES: 591-592) ‘is both distinct from and to some degree competitive with theories of significatory and systemic difference proposed by the semiotician’ (ES: 591). In our opinion, the substantial difference between speech act theory and Peircean or Morrisian semiotics is that the former fails to consider two factors in the pragmatic dimension of meaning which, on the contrary, must not be neglected: interpretation and alterity. In other words, speech act theory does not account for the answering comprehension interpretant. This is a consequence of the fact that the concept of verbal sign (according to John L. Austin and John R. Searle) lacks a semiotic foundation.

Stressing the interpretant rather than the interpreter, pragmatics concerns the interpretant which does not merely identify the interpreted, thereby acting as an ‘identifying interpretant,’ but responds and takes a stand toward it. This is what we have called the answering comprehension interpretant which, unlike the identifying interpretant, is specific to a sign and interprets its actual sense. Sign interpretation in terms of answering comprehension opens to interpretive trajectories connected with sense, advancing toward signness (or semioticity) beyond signality. Rather than use the term ‘meaning’ in relation to interpretants whose task it is to identify interpreteds, or ‘sense’ for interpretants whose task is not limited to merely identifying the interpreted, we may distinguish between two zones of meaning, that of signality (the object of syntactics) and that of signness (the object of pragmatics). As anticipated, the interpretant relative to the signal and to signality is the identification or identifying interpretant; instead, the interpretant specific to the sign, that which interprets its actual sense is the responsive understanding or answering
comprehension interpretant. This type of interpretant concerns the pragmatical dimension of the sign. The relation between interpreted and answering comprehension interpretant depends on the models, habits and customs of the world in which the interpreted-interpretant relation is situated. The answering comprehension interpretant is the conclusion of a line of reasoning in an inferential process that is structured dialogically. Pragmatics deals with the relation between the sign vehicle or ‘representamen,’ the interpreted and the interpretant in its full sign nature, that is, as the interpretant of answering comprehension.

20. Semiosic spheres and dialogic interconnection
Semiotics today has come a long way with respect to the science of signs as conceived and foreseen by Saussure and is now far broader than a science that focuses on signs in the sphere of socio-cultural life. Semiotics is not only anthroposemiotics but also endosemiotics (semiotics of cybernetic systems inside the organic body on the ontogenetic and phylogenetic levels), microsemiotics (the study of metabolism in unicellular life forms), mycosemiotics (semiotics of fungi), phytosemiotics (semiotics of plant life), zoosemiotics (semiotics of interactions among animals), machine semiotics (semiotics of sign processing machinery), environmental semiotics (the study of the interaction between the various species and environment).

Main trends in semiotic inquiry today contradict the idea of the individual as a separate and self-sufficient entity. The body of an organism in the micro- and macrocosm is not an isolated biological entity, it does not belong to the individual, it is not a separate and self-sufficient sphere in itself. The body is an organism that lives in relation to other bodies, as such it is intercorporeal and interdependent. This concept of the body finds confirmation in cultural practices and worldviews which are based on intercorporeity, interdependency, exposition and opening. However, these days such conceptions are almost extinct (what remains are mummified,
archeological residues studied by folklore analysts or preserved in ethnological museums and in the histories of national literature).

Think of how the body is perceived in popular culture, the forms of ‘grotesque realism,’ as discussed by Mikhail Bakhtin (1963 and 1965). Here, the life of the body is not conceived in individual terms, that is, separately from life over the planet, indeed from the world in its globality. However, only very weak traces of the grotesque body have survived in the present day. We are alluding to such signs as ritual masks, masks used during popular festivities, carnival masks. According to grotesque realism the contours of the body are undefined. In other words, the body is not confined to itself, but, on the contrary, it flourishes in a relation of symbiosis with other bodies, in processes of transformation and renewal which transcend the limits of individual life. ‘Grotesque realism’ is characteristic of medieval popular culture. It describes a condition that existed before the development of individualism as connected with the rise of bourgeois society, and therefore before the development of an individualistic conception of the body. But what we wish to underline is what seems to be a paradox: that is, in today’s society of world and global communication, this individualistic, private and static conception of the body is in fact reinforced and exasperated.

An approach to semiotics that is at once global and detotalizing presupposes dialogue and otherness. In other words, global semiotics presupposes the capacity for listening to the other, a disposition for opening to others, for listening to others in their otherness, for hospitality. Here, opening is not only understood in the quantitative sense (that is, with reference to the omnicomprehensive character of global semiotics), but also in the qualitative sense. Otherness obliges the totality to reorganize itself always anew in a process related to ‘infinity,’ as Emmanuel Levinas teaches us, or to ‘infinite semiosis,’ to say it with Peirce. The relation to infinity is far more than cognitive: beyond the established order, beyond
the symbolic order, beyond our conventions and habits, it presupposes a relation of involvement and responsibility. This relation to infinity is a relation to what is most refractory to the totality and, therefore, it is a relation to the otherness of others, of the other person. And the expression ‘other person’ is not understood in the sense of another Self like ourselves, another alter ego, an I belonging to the same community, but another in its extraneousness, strangeness, diversity, the alien self. This is about difference toward which Self cannot be indifferent in spite of all the efforts and guarantees offered by identity.

Furthermore, as anticipated above, all semiotic interpretations by the student of signs, especially when operating on a metasemiotic level, must keep account of the dialogic character of the relation with the other. In fact, dialogism is a fundamental condition for an approach to semiotics which is oriented globally and tends to privilege and enhance rather than englobe or enclose the particular and the local.

21. Seeking in the source
The title of this paragraph alludes to the title of a chapter in Sebeok’s book The Sign & Its Masters (1979: 84-106), ‘Looking in the destination for what should have been sought in the source.’ The source we intend to seek in is the comprehensive view of semiotics as represented by the plan that subtends and orientates the Handbook Semiotik/Semiotics. This source coincides with the scientific and editorial work of Thomas A. Sebeok, one of the figures who has most contributed to promoting semiotics, to organizational activities in semiotics, to its institutionalization on an international level and, therefore, to its current configuration in the world of academia and research.

The foundational scope of Semiotick/Semiotics coincides with Sebeok’s own approach to semiotics which is holistic, ecumenical or, to use his most recent denomination, global. The editorial enterprise achieved
with this *Handbook* (as well as with the *Encyclopedia of Semiotics*, edited by Paul Bouissac) cannot be separated from Sebeok’s semiotic enquiry. The substantives ‘endosemiotics’ and ‘zoosemiotics’ were coined by Sebeok in 1972 and 1976 respectively (see Petrilli and Ponzio 2002a), and while the term ‘biosemiotics’ already existed, Sebeok is a pioneer in this particular field as well, and no doubt promoted it more than anyone else (cf. the entry ‘Biosemiotics’ by Jesper Hoffmeyer, *ES*, who also mentions Bateson as a significant contributor to this particular field). Sebeok is not only one of the editors of *Semiotik/Semiotics*, but he in fact created the conditions which made this *Handbook* possible at no less an important level than the general plan. Consequently, some information about the development of Sebeok’s research is in order.

Sebeok’s interests cover a broad scope of territories ranging from the natural sciences to the human sciences (see Sebeok, ‘Signs, Bridges, Origins,’ in Sebeok 2001b: 59-73). He deals with theoretical issues and their applications from as many angles as are the disciplines which he calls into question: linguistics, cultural anthropology, psychology, artificial intelligence, zoology, ethology, biology, medicine, robotics, mathematics, philosophy, literature, narratology, and so forth. Initially Sebeok’s research may seem rather erratic as he experiments different perspectives and embarks upon a plurality of different research ventures. However, the broad scope of his interests which may seem distant, in reality come together and find a focus in his ‘doctrine of signs’ and in the fundamental conviction that subtends his general method of enquiry: the universe is perfused with signs, indeed, as Peirce hazards, it may even be composed exclusively of signs.

As a fact of signification the entire universe enters Sebeok’s ‘global semiotics’. Semiotics is the place where the ‘life sciences’ and the ‘sign sciences’ converge, therefore where consciousness is reached of the fact
that the human being is a sign in a universe of signs. Says Sebeok in the
‘Introduction’ to his monograph *Global Semiotics*:

In sum, *global semiotics* can be seen as composed of two partially
overlapping estates: ‘normal’ semiotics, as defined above, the subject
matter of which is, intrinsically, Minds, Models, and Mediation; and
biosemiotics, all this and much, much more, as presented throughout
this book. Needless to point out, practitioners of the discipline may
be qualified to work in one aspect or the other, or, as a rule, in one or
more fractions of the supervening category. Scarce is the polymath of
the magisterial stature of, say, Charles Peirce, capable of reaching
athwart more than a couple of divisions, especially across the
humanities and the sciences, which are perhaps uniquely bridged by
semiotics (as argued in Chapter 5 [Signs, bridges, origins]). (Sebeok
2001b: xxii)

Through his numerous publications Sebeok has propounded a wide-ranging
vision of semiotics that coincides with the study of the evolution of life.
After Sebeok’s work our conception of the semiotic field and of the history
of semiotics has changed significantly. Thanks to him semiotics at the
beginning of the new millennium presents a far more expanded view than
in the first half of the 1960s.

22. The evolution of anthroposemiosis and language
Sebeok analyzes the origins of anthroposemiosis signaling its distinctive
feature with respect to nonhuman zoosemiosis, namely language. Hominid
forms, which evolved out of the australopithecines, include *Homo habilis*
(‘handy man,’ 2.4 to 2.0 million years ago), the first hominin with a
distinctly enlarged brain (600-800 cm³), first described in 1964. It appears
virtually certain that *habilis had language*, as an *interior modeling device*,

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although not speech. As stated, a modeling system is a tool with which an organism analyzes its surroundings. Language-as-a-modeling-system seems to have always been an exclusive property of the genus Homo. Members of early hominid species communicated with each other by nonverbal means, in the manner of all other primates. Homo erectus too (‘upright man’ over 1.5 million years ago) with a brain volume of 800-1,200 cm³ and a far more elaborate tool kit, including fire, had language, yet not speech (cf. Sebeok, Article 18, ‘The Evolution of Semiosis,’ S/S, 1; cf. also Sebeok 1986, 1991a, 1994b).

Language as a specific human primary modeling system emerged on the scene perhaps 2.5 or even 3.0 million years ago circa. Instead, verbal language or speech appeared solely in Homo sapiens as a communication system, and gradually in Homo sapiens sapiens it also developed as a cognitive system, that is, a secondary modeling system.

Emphasizing the species-specific character of human language, Sebeok, with Jean Umiker-Sebeok, intervened polemically and ironically with regard to the enthusiasm (which he attempted to cool down) displayed for theories and practices developed to train animals on the assumption that animals can talk (cf. Sebeok 1986: Chp. 2). Furthermore, the distinction between language and speech and the thesis that language appeared much earlier than speech in the evolution of the human species, both add a further element to the critique of phonocentrism. Language cannot be reduced to the status of mere communicative device (on this point Sebeok is in accord with Chomsky, but Chomsky does not clearly distinguish between language and speech). Said differently, the specific function of language in the evolution of anthroposemiosis is not to transmit messages and give information, but to model worldviews.

All species communicate in a world that is species-specific and ensues from the type of modeling with which a given species is endowed (cf. J. von Uexküll 1967 [1934], 1992). Very early in its development as a hominid, the
human species was endowed with a modeling device capable of producing an infinite number of worlds. This explains the evolution of hominids into *homo sapiens sapiens*. Human animals can produce an infinite number of worlds thanks to their modeling device, or language, which functions in terms of syntactics. In other words, a finite number of elements can be composed and recomposed in an infinite variety of ways in construction, deconstruction and reconstruction processes. The multiplicity of languages as well as the elements (or dimensions) forming each one of them (phonological, syntactic, semantic), all depend on this modeling device. Thanks to the syntactic capacity what is organized in one way can also be reorganized in another. The human modeling device is endowed with syntactics and is capable of the work of bricolage.

Thanks to his studies on ‘la pensée sauvage,’ Claude Lévi-Strauss may be counted among those researchers who have most contributed to identifying and illuminating this particular human capacity.

23. Syntax, language and speech

The syntactical capacity for reorganization is the condition of the capacity for reflection. In other words, thanks to language human beings are capable of reflecting on materials, instruments and models, and consequently of engendering new modeling processes with the same materials. This capacity for reflection is the capacity for metasemiosis, or what we propose to call semiotics. In this sense, language and, therefore, the work of syntax is semiotical.

At this point we must specify that when we speak of ‘syntax’ we are not just referring to one of the three dimensions of semiotics, that is, syntactics, as opposed to the other two dimensions, that is, semantics and pragmatics, as described by Charles Morris (1938; *S/S*, Articles 2, 3, 4, 113). Syntax is part of each of the three ‘dimensions.’ Or, if in relation to verbal language we consider ‘grammar’ as formed of a phonological, semantic and
syntactic component along the lines proposed by Noam Chomsky, syntax is also present in the other two components. The syntax of phonemes gives rise to monemes, and the syntax of monemes gives rise to the words of a language even before words (categorematic and syncategorematic terms) are organized by syntax properly understood. Consequently, syntax is language itself considered from the viewpoint of its constructive, deconstructive and reconstructive capacity, just as semiotics is language considered in terms of its capacity for metasemiosis.

By virtue of its syntactic component, language does not represent immediate reality. From this point of view Sebeok (1991a: 57-58) observes that language is, relatively speaking, a complex modeling system. Instead, the nonverbal models activated by nonhuman animals and likewise by human infants are examples of simple modeling. The models in question here are more or less pliable representations that must fit ‘reality’ sufficiently to tend to secure survival in one’s Umwelt.

Such ‘top-down’ modeling (to use a current jargon borrowed from the cognitive sciences) can persist, and become very sophisticated indeed in the adult life of exceptionally gifted individuals, as borne out by Einstein’s testimonial or by what we know about Mozart’s or Picasso’s ability to model intricate auditory or visual compositions in their heads in anticipation of transcribing this onto paper canvas. This kind of nonverbal modeling is indeed primary, in both a phylogenetic and an ontogenetic sense. ... Syntax makes it possible for hominids not only to represent immediate ‘reality’ (in the sense discussed above) but also, uniquely among animals, to frame an indefinite number of possible worlds in the sense of Leibniz. (Sebeok 1991a: 57-58)

In his article ‘Evolution of Semiosis,’ Sebeok briefly mentions the ‘exaptation’ processes of language into speech (and into other
manifestations such as script), and vice versa of speech into language. In other words, Sebeok deals with adaptation and exaptation in language and speech, which being pivotal processes in the evolution of anthroposemiotics are topics that belong to anthroposemiotics (cf. Sebeok 1991a). ‘Exaptation’ is a term coined by paleontologists Stephen Jay Gould and Elizabeth Vrba as a counterpart to the Darwinian notion of ‘adaptation.’ Encyclopedia of Semiotics includes the entry ‘Exaptation’ (225-226, by Michael Ruse, who is also the author of the entry ‘Evolution,’ 223-225). Classified according to two types, exaptations can arise either in a situation in which ‘a character, previously shaped by natural selection for a particular function (an adaptation), is coopted for a new use’ or when ‘a character whose origin cannot be ascribed to the direct action of natural selection … is coopted for a current use’ (Gould and Vrba 1982: 5). Observes Ruse:

The idea of an exaptation is one with obvious implications for any biological theory of communication, such as that of Noam Chomsky, which wants to locate language in evolution but has trouble seeing how the Darwinian mechanism of natural selection can do all that is required. (ES: 226)

The plurality of natural languages (as well as the 'inner plurilingualism' of any single natural language) cannot be explained (the 'Babel enigma') in terms of Chomsky's linguistics in spite of his insistence on the 'creative character of (verbal) language,' for his approach presupposes an innate Universal Grammar. Such aspects as the plurality of languages and 'linguistic creativity' testify to the capacity of language, understood as a primary modeling device, for producing numerous possible worlds. Both aspects derive from the fact that human modeling is able to invent manifold worlds. In other words, linguistic creativity as well as the plurality
of languages derive from the gift of language for the ‘play of mosement.’
‘Purport,’ according to Hjelmslev (1953: 32-33), is an amorphous
continuum ‘on which boundaries are laid by the formative action of
language.’ Language articulates the shapeless purport of expression and
content in different ways in different languages. For instance, the human
phonic material of purport is divided into different *figuræ* (phonemes) by
different languages; and the color continuum is divided differently, e.g. in
English or Welsh (see Article 117, by Johansen, on Hjelmslev, §3, §4, S/S, 2:
2275-2282). All this may be explicated on the basis of creativity as it
characterizes language understood as a species-specific human modeling
device.

To use Ferruccio Rossi-Landi's terminology, ‘linguistic work’ produces
different paradigms corresponding to the worlds of different languages.
The same thing happens in the articulation and organization of the social
continuum in different cultures, for instance in the systems of family
relations analyzed by Lévi-Strauss (see §19 on structuralism in Article 74,

Chomsky's language theory does not keep account of the difference
between language and speech. And the theory of the origin of verbal
language also tends to ignore this difference. Consequently, Chomsky's
language theory attempts to explain the different historical natural
languages and their grammars in terms of a hypothetical universal
grammar, while the latter searches for the origin of natural languages in
another (primordial) natural language. On the contrary, the origin is to be
searched for in the human species-specific primary modeling device, in
Sebeok's terminology, language, which was a primary adaptation in the
evolution of hominids. Speech developed out of language, and like
language made its appearance as an adaptation, but for the sake of
communication and much later than language, precisely with *Homo sapiens*, not more than about 300,000 years ago. Only after the physical
and neurological capacity for speech evolved in *Homo sapiens* was speech possible, that is, the use of language for vocal communication. Consequently, language too ended up becoming a communication device; and speech developed out of language as a derivative exaptation.

Concerning the relation between language and speech, Sebeok remarks that it required a plausible mutual adjustment of the encoding and decoding capacity. On the one hand, language was ‘exapted’ for communication (first in the form of speech, i.e., for ‘ear and mouth work’ and later script, and so forth); on the other, speech was exapted for (secondary) modeling, i.e., for ‘mind work.’ ‘But,’ adds Sebeok, ‘since absolute mutual comprehension remains a distant goal, the system continues to be fine-tuned and tinkered with still’ (Sebeok 1991a: 56).

But there is yet another process of exaptation in the evolution of anthroposemiosis, a process which is rather recent. Today, linguistic work itself has become productive, and presents itself not only as inseparable from nonlinguistic (material) work, but also as an effective human resource. The ancient separation between manual work and intellectual work has now been superseded by automation and computers. This separation coincides with the separation between ‘nonlinguistic’ or ‘material’ work and ‘linguistic work,’ to use Rossi-Landi’s terminology. The expressions ‘linguistic work’ and ‘nonlinguistic work’ are convenient abstractions. However, we should note that they are more than this: they are ‘concrete abstractions.’ More than just simply convenient expressions indicating conceptual operations carried out in a theoretical context, they are also aspects of historico-social reality itself. From this second point of view these two abstractions really exist, they are part of historical reality. Given that verbal linguistic work is functional not only to communication but also to modeling, it presents a fundamental condition with respect to nonlinguistic work. All nonlinguistic work takes place on the basis of the
instruments, materials and models elaborated through linguistic work. Today's automatic machine represents one of the most advanced results of the exaptation of linguistic work for the sake of production and profit, with all the difficulties and contradictions that ensue in the social relations of production. This topic concerns the problem of the relation between machine semiosis and linguistic semiosis. An adequate understanding of this issue presupposes reflection on the relationship between language and writing in the terms presented above.

24. Sign machines and linguistic work
Recognizing human beings as the concrete subjects of history, the responsible agents of culture and communicative systems, Ferruccio Rossi-Landi formulates the thesis of a homology between verbal and nonverbal communication (Rossi-Landi 1992b [1968]). Linguistic work can be placed on the same level as work necessary to produce physical objects because 'if we do not want to admit that something human can exist for man without the intervention of man himself, we must accept the principle that every wealth or value, however understood, is the result of work which man has accomplished and can do again' (Ibid., Eng. trans.: 35). Since human beings construct themselves historically through the production of tools and verbal messages, Rossi-Landi suggests that the definition of human beings as speaking and working animals should be a unitary definition, considering that these two modes of social behavior are connected by a relation of homology.

In their discussion of machine semiosis (S/S, 1, Art. 26), the authors (Peter Bøgh Andersen, Per Hasle, and Per Aage Brandt) interrogate the role of machines in semiosis understood in a Peircean key (and in accord with Art. 1 §2, S/S, 1: 4), that is, in terms of the relationship between interpretant, representamen and object. The question is precisely: we know machines can be objects of signs, but can they be representamens
and interpretants? The authors start from the homological scheme of production proposed by Rossi-Landi (1992a, b).

From a semiotic perspective that can no doubt be described as holistic or global, Rossi-Landi’s goal was to study the relationship between material artifacts and verbal artifacts through a method of analysis which he chose to call the ‘homological method.’ This method does not consist in identifying immediate and superficial relations of resemblance, as in the case of analogy, but in identifying homologies, that is, resemblances of a structural and genetic order among objects associated with different fields of knowledge which at a superficial glance seem to be separate. In spite of their different disciplinary provenance and the fact that they appear separate, material and linguistic artifacts may be considered as parts of the same totality because they are the result of human work. Therefore, the homological method contributes to critiquing the tendency to hypostatize parts of a totality as though they were separate from it, when in fact they actually form the totality to which they belong. Thanks to such an orientation, the homological method has also aided debate on the need to transcend separatism among the sciences.

The homological element breaks with specialization: it obliges one to keep in mind different things at the same time, it disturbs the independent play of separate sub-totalities, and calls for a vaster totality, whose laws are not those of its parts. In other words, the homological method is an antiseparatist and reconstructive method and, as such, it is unwelcomed by the specialists. (Rossi-Landi 1967-72: 16-17; 1985: 53. On Rossi-Land’s homological method, see also Ponzio 1988)

Rossi-Landi proposes an articulate scheme evidencing the structural homology between material production and linguistic production. The
latter is not limited to the linguistic notion of the double articulation of language which, if anything, is better understood in the light of Rossi-Landi’s scheme. In fact, the articulation of sentences in terms of words and monemes and of monemes in terms of phonemes, as described by André Martinet (1960), turns out to be oriented in the opposite direction from the real processes of linguistic production (cf. Rossi-Landi 1992a: 173-176). Linguistic work carried out by speakers – both phylogenetically and ontogenetically – proceeds from sounds that are initially disarticulate and which become increasingly articulate as they transform into words, then phrases and sentences of growing complexity.

25. Articulation and modeling
The concepts of articulation and model are closely related, and we believe that these two very important semiotic concepts can mutually illuminate each other.

In his homological scheme of production described in ‘Articulations in Verbal and Objectual Sign Systems,’ Rossi-Landi (1992a: 189-232) describes ten levels in human production. These progress from the zero level of intact, unworked-upon nature, i.e., of material nonsound substance and material sound substance, to the tenth level of global production, i.e., of all objectual sign systems and all verbal sign systems of a productive unit.

First level, presignificant items: from the viewpoint of material production (M.P.), matteremes; from the viewpoint of verbal production (V.P.), phonemes.

Second level, irreducibly significant items: M.P., objectemes (lexobjectemes or morphobjectemes); V.P., monemes (lexemes or morphemes).

Third level, completed pieces: M.P., finished pieces of utensils; V.P., word, syntagms, expressions, parts of speech, phrases.
Fourth level, utensils and sentences: M.P., simple utensils; V.P., simple sentences.

Fifth level, aggregates of utensils: M.P., compound utensils; V.P., compound sentences.

Sixth level, mechanism: M.P., machines of a simple type; V.P., syllogisms, organized groupings of interconnected sentences.

Seventh level, complex and self-sufficient mechanisms: M.P., self-sufficient mechanisms; V.P., lectures, speeches, essays, books.

Eighth level, total mechanism or automation: M.P., automated machines; V.P., subcodes and lexicons.

Ninth level, nonreportable production: M.P., special constructions, unique prototypes; V.P., ‘original’ literary and scientific production.

Tenth level, global production: M.P., all objectual sign systems of a ‘productive unit’; V.P., all verbal sign systems of a ‘productive unit’ (cf. Rossi-Landi 1992a: 221).

Rossi-Landi also describes parking lots of material and verbal artifacts:

– parking lot of matteremes and phonemes;
– parking lot of objectemes and monemes;
– parking lot of utensils and sentences;
– parking lot of mechanisms and syllogisms;
– parking lot of automated machines and nonverbal and verbal program-bearing codes (cf. Ibid.: 223).

The pieces parked in these levels which involve qualitative leaps in the transition from one to the other, are used to build different constructions.

The concept of modeling was originally developed by the Moscow-Tartu school of semiotics in the early 1960s (Lucid 1977; Rudy 1986) to indicate natural verbal language (langue). Language thus understood is considered as a primary modeling system, while all other human cultural
systems are described as secondary modeling systems. Instead, Sebeok extends the concept of modeling beyond the boundaries of human semiosis and relates it to the concept of Umwelt as described by the biologist Jakob von Uexküll. Consequently, the notion of Umwelt is understood as a model of the external world, a concept which has proven to be of vital importance for research in the various disciplines grouped together under the name of ‘biosemiotics.’ Sebeok has demonstrated that the modeling capacity is observable in all life forms. His book published in the year 2000, *The Forms of Meaning* (co-authored with Marcel Danesi), is a study of human modeling processes as distinct from other modeling processes present in the living universe, in particular the world of superior animals.

### 26. The sign machine as interpretant

The automated machine, in particular computer systems are parked in level 5 in Rossi-Landi’s scheme of homological production. The second question asked in Article 26 (cf. S/S, 1: 549, 552) by Andersen, Hasle, and Brandt about machine semiosis is the following: ‘Should we place machines in the interpreter role?’ The Authors’s answer is affirmative. This confirms the spontaneous interpretation made in colloquial speech by those who use computers when they anthropomorphize their machine using words like ‘ask,’ ‘answer,’ ‘comment,’ ‘know,’ ‘want.’

Finally, the Authors deal with the question of whether it is possible to characterize machine semiosis of semiotic machines, i.e., computer-based signs, as distinct from human semiosis. Their reply is negative and consistent with research on autopoietic systems carried out by the two Chilean biologists, Humberto R. Maturana and Francisco J. Varela (cf. 1980) and their followers. The latter submit that exactly the same situation obtains in machine semiosis of semiotic machines as in biological
organisms. We have mentioned the theory of *autopoiesis* above with regard to the relation between modeling and dialogue.

The term autopoiesis was applied to semiosis in 1973 (in a paper entitled ‘Autopoiesis and the organization of the living’) by Maturana and Varela (now in 1980) to name the capacity for self-producing organization unique to living beings. According to this theory, living systems have a self-reproducing or autopoietic organization: this consists of a network of processes that simultaneously produce and materialize this same network as a unity (see also the entry ‘Artificial Life,’ by Brian L. Keeley, *ES*: 48-51).

The autopoietic organization is defined as a unit by a network of productions of components which (i) participate recursively in the same network of productions of components which produced these components, and (ii) participate recursively in the same network of productions as a unit in the space in which the components exist. (cf. Varela, Maturana, and Uribe 1974: 188)

The theory of autopoietic systems arises from the classical idea of *homeostasis*. However, as described in the entry ‘Autopoiesis’ (by Evan Thompson, *ES*: 53-55), autopoietic systems extend homeostasis in two significant directions: ‘First, it makes every reference to homeostasis internal to the very system itself through the mutual interconnection of processes; second, it posits this mutual interconnection as the very source of the system’s identity or, in biological terms, of its individuality’ (*ES*: 54). In the light of this theory, a tentative conclusion of the discussion on the possibility of distinguishing between sign machines and human semiosis could run as follows: ‘[T]he difference between human and machine semiosis may not reside in the particular nature of any one of them. Rather, it may consist in the condition that machine semiosis presupposes...’
human semiosis and the genesis of the former can be explained by the latter’ (Article 26, ‘Machine Semiosis,’ S/S, 1: 569).

27. Machine semiosis and human work

Let us now take a closer look at the relation between the ‘semiotic machine’ and ‘computer-based signs,’ or, as we prefer, ‘sign machine,’ on the one hand, and human semiosis, on the other (whose specific characteristic is language, or in Rossi-Landi’s terminology, ‘linguistic work’).

Subordination of work to the machine is connected to the development of signs (with progress in knowledge, competencies, specializations, and sciences). A specific form of subordination is that of linguistic work to the sign machine in a relation that is ever more a relation of identification, rather than of homology. Today production and communication can no longer be separated. The relation to machines converges with the relation to signs, verbal and nonverbal. Nor is this simply a case of commodities that are messages and messages that are commodities.

If with Rossi-Landi we shift from the level of the market to the level of linguistic production and general sign production, it is soon obvious that automation not only involves the system of machines but also the system of languages. Reference here is both to language in general and to historical-natural languages, which of course cannot operate separately from each other. Human work in the communication-production processes of automation developed to the level of the sign machine, is linguistic work. Work in the ordinary sense and its products, on the one hand, and linguistic work and its products, on the other, are connected by a relation of homology (cf. Rossi-Landi 1985, 1992a, b, 1994). These two faces of the human capacity for work are united in the semiotic machine. This clearly emerges in the relation between computer software and computer hardware, which are inseparable. The expression linguistic work refers to

All this can be interpreted in light of the condition of global communication today. As evidenced by the connection between computer software and hardware, the expression ‘global communication-production’ indicates a new phase in social reproduction where machines and signs integrate each other (apart from indicating the extension of communication at a world-wide, planetary level).

In the capitalist production system in its current phase of development, the machine can replace intellectual work. This means that automation has reached high levels of development, to the point of becoming communication, so that machines too function as signs. Communication and production have come together presenting a phenomenon that is altogether new, calling for analysis from two interconnected perspectives: the economic and the semiotic. Regarding the economic, unlike earlier phases in the development of the capitalist system, communication is not limited to the intermediary phase in the production cycle (exchange), but identifies with production (production is communication) and with consumption (the third phase in the productive cycle, therefore consumption is consumption of communication). From a semiotic perspective, thanks to automation (applied even to operations previously reserved to human intelligence) communication is extended to artifacts, therefore to the sphere of the artificial and inorganic. All this does not question the axiom that semiosis converges with life, as Sebeok maintains (1986, 2001b). Though made of inorganic material, machines communicate and may be considered as part of the organic world in the sense that they presuppose biosemiosis, more specifically anthroposemiosis. Machines presuppose high levels of historical-social
development in anthroposemiosis, which is the only context where machines function as signs.

Automatic development of the machine in terms of ‘artificial intelligence’ (see Markus Peschl, ES: 44-46) marks the advent of something new in semiosis over the planet. The level of the semiotic machine represents a whole new ladder with respect to preceding levels (cf. ‘Machine Semiosis,’ in S/S, 1: 551). Traditional automatic machines (i.e., mechanical machines which replace physical force) have always communicated with each other, whether internally or externally with other machines. But, today, with high-level automation, more than just a mechanical type of communication is possible. Machines are now capable of the type of semiosis we call language, described so far as a species-specific characteristic exclusive to human beings.

28. ‘Semiotics’ and the machine

The expression ‘semiotic machine’ is particularly significant in light of what we have said so far. From a semiotic perspective, the machine that replaces human intelligence is not only capable of semiosis but also of semiotics. By ‘semiotics,’ as stated above, is here understood a metasemiotic process, that is, a process capable of interpreting other semiotic processes, therefore of metacommunication. Semiotics thus understood, similarly to language understood as semiotics, is a species-specific characteristic of human beings, only possible in anthroposemiosis. And yet, the automatic machine today replaces intellectual work and is also capable of semiotics, of language, on the basis of the fact that the sign machine presupposes biosemiosis. When a question of high-level automation not only is semiosis extended to the inorganic order but also semiotics (understood as language). What does not exist in any other instance of zoosemiosis apart from anthroposemiosis, is achieved in the inorganic world. Communication is present throughout the entire organic order, indeed is the criterial

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feature of life itself, while language is only present in anthroposemiosis and again in the inorganic order. Unlike any other form of organic life apart from the unique exception of human life, the inorganic can be communicative at the highest levels of metasemiosis. This is the most innovative aspect of sign machines, which actually puts us in a position to speak of revolution: the inorganic becomes communicative not only in terms of semiosis, but also of metasemiosis. Consequently, the machine endowed with language, the sign machine, is the only case of a communicative non-organism, even more, it is the only non-organism that is not only semiosically but also semiotically communicative. Therefore, not only are human beings endowed with metasemiosis or semiotics, but also the machines they produce.

29. Human-machine interactivity
At a superficial glance, with high-level machine automation thanks to progress in artificial intelligence, humanity seems completely subservient to the machine, to the extent that machines have lost their instrumental character and humans their agency. However, at a closer look we soon realize that in high-level automation processes this relation is reversed. Humans become active agents once again, as they relate to machines that are progressively more intelligent. Through such interaction humans recover their function as indispensable components in the work process: neither humans nor machines are passive instruments, but rather interactive participants in a complex exchange relation (cf. Art. 14, ‘Technische Medien der Semiose,’ in S/S 1). The expression *interactivity* describes this relation adequately. Moreover, progress in technology and artificial intelligence, contact with high-powered automatic machines calls for the continuous acquisition and innovation of competencies in both quantitative and qualitative terms.
From a technological perspective, intelligent machines require active responses astride of the times from human beings. Human agents must be equal to the new tasks and potential perspected by progress in technology. With earlier forms of automation (represented by the assembly line – think of Charlie Chaplin’s comical-ironical performance in Modern Times), human intelligence was obscured by the machine’s capacity for efficiency. Instead, human intelligence today is continuously elicited and challenged for services that require a capacity for re-elaboration, redefinition and renewal of one’s intellectual and practical competencies. Differently from traditional machines unendowed with language, intelligent machines elicit interactivity: active, variable response, innovation, updating, permanent training are all necessary and inevitable for the sake even of mere implementation. The point is that not only are inventors active, but also users. Furthermore, the interactive relation not only concerns the relation between user and machine, but also between one user and another. The work process develops through mutual participation, reciprocal assistance, mutual exchange of information, data, etc. The functional scheme is neither linear nor circular. The figure that best portrays this new condition is doubtlessly a grid. Intelligent machines require interactions that develop in networks and in turn networks that elicit interactions.

In her article ‘Social Media of Semiosis’ and in the context of her observations à propos contributions from the social sciences to semiotic, Terry Threadgold comments on the individual’s active role in today’s social system, therefore on the dialogic interaction between the individual and the social in the following terms:

What social labour has put asunder it is now weaving back together again. It is perhaps interesting just to recall here that all of this also encompasses another significant rewriting, the re-alignment of the social and the individual with quite different collocational sets and
values. In de Saussure’s early formulations, the social was located in the system, the individual outside it. Now, individual action, dialogism, heteroglossia, conflict, institutions and society, all those individual and specific things which de Saussure’s system excluded, are actually defined as the social, as what constitutes the social and constructs the systematics. The social and the individual are seen as mutually constructive and as constructive of the systems in terms of which they are understood. There is no longer any inside and outside, only a constant dialectic between individual and social. The dynamic excluded other (the individual) has become the social and the system, and the static, synoptic, social system has now to be accounted for within the terms of that dynamic, as sets of products, codes, whose processes of production have been forgotten, and which maintain only a use-value within this dynamic economy. (Art. 15, S/S, 1: 400)

The new type of labor required of human beings by the intelligent machine is assimilated to abstract labor, labor in general or indifferent labor. Such assimilation is the condition of possibility for the evaluation of work in today’s society. In other words, labor associated with intelligent machines is quantified according to parameters established by the purchase and sale of work in capitalist society, therefore it is measured in hours.

But the type of work required by the intelligent machine involves specifically human capacities, notably language, semiotic sign behavior, complex inferential processes, innovation and inventiveness. As such this type of labor resists standard measurement as employed in today’s society: that is, measurement in terms of labor time. The type of human labor we are describing is incommensurable and unquantifiable. Specifically human labor endowed with language and creativity is constitutively incommensurable; quantity is subordinate to quality and cannot be the true criterion or norm to account for human labor.
In spite of its incommensurability as the source of historical-social value, human labor has been assimilated to quantified abstract work measured in hours. As such it has been reduced to the status of commodities, the condition for the very constitution of capitalistic society. This same operation is also applied to linguistic work to the point that we now speak of the condition of ‘linguistic alienation’ (cf. Rossi-Landi 1992a, 1992b [1968]). However, never before as in the current phase in capitalist production has profit depended so heavily on the reduction of linguistic work to the status of commodities (the ‘communication-production’ phase: see Ponzio 1999, Petrilli and Ponzio 2000a, 2005). It is paradigmatic that software (sign complexes) now defines the ‘machine’ and hardware (the physical machine) is subservient to software. This represents a fundamental change in the human production of artifacts. Such expressions as ‘immaterial investment,’ ‘appreciation of human resources,’ ‘human capital’ are symptomatic of the subordination of production to linguistic work. However, these expressions also evidence the fact that we resort to linguistic work, therefore to human intelligence as resources for technological progress and competitiveness.

In today’s communication-production world the capacity for metasemiosis, for language, is the source of value. However, work, immaterial work still has the status of commodities, in other words, work continues to be evaluated in terms of commodities. Consequently, the contrast between the capacity inherent in human work to increase its value and its status as a commodity has never been so sharp. While human work is manifestly incommensurable, today more than ever before it is treated as just another commodity. The contradiction between linguistic work and the work market corresponds to the contradiction between the incommensurability of human work and the systematic demand to commodify (therefore, to quantify) the worker’s contribution, in economic terms, capitalist production. Linguistic work enhanced to a maximum
degree is a specific characteristic of the communication-production system and the new contradiction that arises with respect to the work market is emblematic of the relation between work and semiotic machines in today’s world.

30. Semiotics and ethics

The problem of otherness, dialogism and ethical responsibility is pivotal in Peirce’s conception of the human subject, contrary to reductive interpretations of his semiotics (cf. Petrilli 1999a, 2001f; Petrilli and Ponzio 2005). Peirce’s sign theory contributes to redefining the subject. From a Peircean perspective, the human being, the self viewed as a sign, converges with verbal and nonverbal language, with thought. The subject comes into being as a semiotic process with the capacity to engender a potentially infinite number of signifying trajectories in the dynamics of the relation between utterance and interpretation. As says Peirce, ‘men and words reciprocally educate each other; each increase of a man’s information involves and is involved by, a corresponding increase of a word’s information’ (CP 5.313). Insofar as it is a sign, that is, a sign in becoming, the subject emerges as a dialogic and relational open unit, an ongoing process evolving in the intrapersonal and interpersonal dialogic interrelationship with other signs. The dialogic conception of thought and subjectivity as developed throughout the course of his research may be traced back to Peirce’s early writings. It is worth repeating that as sign material, the subject’s boundaries are not defined once and for all and can only be delimited in the dialogic encounter with other signs. The human being is born into a community and comes into being socially through experiences developed in relation to the experiences of the other members of that community, and never isolatedly from it.
We know that man is not whole as long as he is single, that he is essentially a possible member of society. Especially, one man’s experience is nothing, if it stands alone. If he sees what others cannot, we call it hallucination. It is not ‘my’ experience, but ‘our’ experience that has to be thought of; and this ‘us’ has indefinite possibilities. (CP 5.402, n. 2)

With regard to the ethic and social implications of semiotic investigation, another important scholar of signs in addition to Peirce, Bakhtin, Morris (see especially The Open Self, Varieties of Human Value, and Signification and Significance), is Victoria Lady Welby (see Petrilli 1998c; Petrilli in Sebeok 2001b: 146-148). Welby coined the expression ‘significs’ to name her particular approach to her studies on signs, language and meaning. The Signific Movement in the Netherlands originated from her significs through the mediation of Frederik van Eeden (cf. Heijerman and Schmitz 1991; Petrilli 1998c; Schmitz 1990; Art. 104, ‘Die Signifik,’ by H. Walter Schmitz, in S/S, 2).

Welby’s significs trascends pure descriptivism to analyze signs in their ethical, esthetic and pragmatic dimensions beyond epistemological and cognitive boundaries, where semiotics and axiology intersect. Welby’s proposal of significs arises from the assumption that the problem of sign and meaning cannot be dealt with separately from the problem of the relation of value to meaning in all possible spheres of human interest and purpose. Her project pushes beyond the limits of semiotics understood as ‘cognitive semiotics’ as much as beyond the specialism of semantics. Being concerned with problems of meaning in everyday life and not just in relation to specialized sectors, significs invites us all, specialists and the everyday man alike, to ask the question ‘What does it signify,’ which is not intended to interrogate linguistic meaning alone but also the ethical and pragmatic value of signifying processes. Significs is also a method in mental
exercise with implications of a pedagogic order. Welby wishes to evidence the relevance of meaning in all its complexity to interpersonal and social relationships and, therefore, to making responsible choices.

Other expressions used by Welby to designate her theory of sign and meaning, or significs, is ‘philosophy of significance,’ ‘philosophy of translation,’ and ‘philosophy of interpretation,’ which highlight different aspects of her approach (cf. Welby 1983 and 1985). The significance of signs increases with an increase in interpretive-translative processes across different types and orders of signs. Translation is considered as a method of interpretation and understanding and is pioneeristically conducted into the territory of reflection on sign and meaning. In this context translation is not only understood as interlinguistic translation, but also as intersemiotic and intralinguistic translation, to use Roman Jakobson’s terminology (1971 [1959]). All signs and expressions are translations in themselves, as confirmed by Peirce’s concept of sign. Welby maintains that mental activities are automatic translative processes. Her theory of translation is structural to her significs and is closely connected with her reflections on the figurative nature of language, therefore on the role carried out by metaphor, analogy, and homology in the development of thought, knowledge and communication processes. Significs emerges as a method for the enhancement of awareness, for augmenting and mastering interpretive-translative processes as the condition for understanding the sense, meaning and significance of verbal and nonverbal behavior at large. As such Welby’s significs concerns the ethic dimension of sign life and its study beyond the strictly cognitive or epistemological dimension.

31. Subjectivity and corporeity between identity and alterity
The categories of ‘identity’ and ‘subjectivity’ are closely interrelated and carry out a decisive role in worldwide and global communication, whether a question of individual identity or identity of the collectivity (Western
world, European Union, nation, ethnic group, social class, etc.). The concepts of individual and community identity need to be analyzed in a semiotic key. In both cases identity may be governed by a tendency to monologism or to dialogism. The difference is profound and pervasive.

As anticipated above, Peirce’s reflections have contributed to redefining the subject (cf. Colapietro 1989; Petrilli 1999b; Petrilli and Ponzio 2005: Part I; Sebeok, Petrilli and Ponzio 2001). The I is an extraordinarily complex sign, made of verbal and nonverbal language: ‘It is that the word or sign which man uses is the man himself [...] the man and the external sign are identical, in the same sense in which the words homo and man are identical’ (CP 5.314). The subject is in becoming in semiosic processes that consist of a potentially infinite number of signifying trajectories. As stated, as a developing sign, a sign in becoming, the subject is a dialogic and relational entity, an open subject emerging in the intrapersonal and interpersonal interrelation with other signs. Therefore, the boundaries of the subject-sign are defined through dialogic encounters with other signs. Subjectivity develops in sociality, relatedly to the experiences of others and never in isolation. Subjectivity may be considered in terms of a community obeying the laws of the logic of otherness. Self is a community of dialogically interrelated selves. If we interpret the word ‘in-dividual’ literally as meaning ‘non divided, non divisible,’ with Peirce we claim that ‘a person is not absolutely an individual’ (CP 5.314; cf. Petrilli and Ponzio 2005). Peirce rejected the ‘illusory phenomenon’ of a finite self or a self-sufficient self. The social and community character of self does not contrast with its singularity and uniqueness, with signifying otherness with respect to any interpretive process that may concern it. The self is ineffable (cf. CP 1.357), saying beyond the said; the utterances of self convey significance beyond words. At the same time, however, the ineffability and uniqueness of self do not imply incommunicability.
In her own studies on subjectivity Welby establishes a distinction between I and Self (her unpublished manuscripts include a file entitled Subjectivity with texts written between 1903 and 1910; cf. Welby Collection, York University Archives, Toronto; Petrilli 1998c for a description of the materials available at the archives; Petrilli and Ponzio 2005). Welby analyzes subjectivity in terms of the complex relation between ‘I,’ or, introducing a neologism, ‘Ident,’ and ‘self.’ Self is also designated with the neologism ‘ephemeron,’ in fact self is mortal, ephemeral like the body. Instead, I tends toward immortality beyond the mortality of the body and of self. Formed in this way, identity is not unitary or compact, and presents a surplus, something more with respect to the sum of its parts, to identity itself. Identity is constructed in the dialogic relation of self to I. I or Ident is not the ‘individual’ but the ‘unique’. Indeed, ‘It is precisely our di-viduality that forms the wealth of our gifts,’ says Welby in her unpublished manuscripts.

The subject is an incarnate, intercorporeal subject, a body interconnected to other bodies, and not separate from them. The subject is the expression of intercorporeity on a synchronic and diachronic level, an incarnate body from the perspective of biological evolution, of the species, and from the perspective of sociality, of cultural history. The body plays a fundamental role in the development of awareness or consciousness. Consciousness is incarnate consciousness. The body is a condition for the full development of consciousness, of the human being as a semiotic animal. The self develops interrelatedly with other bodies through which it extends its boundaries, which are the boundaries of the world it experiences. The word is an extension of the body. Indeed, echoing Bakhtin, the word forms a bridge joining one’s own body to the body of others.
32. Human semiosis between reason and reasonableness

Both Welby and Peirce have contributed to the development of a global science of signs capable of accounting for signifying processes in their complexity, of considering meaning not only in terms of signification, but also of sense and significance. For both Peirce and Welby, study of the life of signs and of the signs of life cannot be conducted merely in descriptive terms, with claims to neutrality. With the term ‘significs’ Welby aimed to indicate a sign theory that is comprehensive and critical, one squarely confronting the problem of the relation of signs and values. The term ‘significs’ designates the disposition for evaluation, the value conferred upon signs, the pertinence of signs, their scope, signifying value, significance.

Peirce also focused on the normative sciences in the final phase of his research. He linked logic to ethics and to esthetics: logic is the normative science concerned with self-controlled thought, ethics is the normative science that focuses on self-controlled conduct, and esthetics the normative science devoted to ascertaining the end most worthy of our espousal. In this context, Peirce took up the question of the ultimate good, *summum bonum*, or ultimate value which he refused to identify with either individual pleasure (hedonism) or with a societal good such as the greatest happiness for the greatest number of human beings (English utilitarianism). Instead, the *summum bonum* can only be defined in relation to the ‘evolutionary process’, that is, to a process of growth. And, in fact, Peirce identified the highest good in the continuous ‘growth of concrete reasonableness’. Semiotics must account for the ‘reason of things,’ and the reason of things cannot be separated from the capacity for reasonableness and detotalization, the condition for critical and dialogic totalization.

From the perspective of global semiotics the issue at stake is the following: given the risks for semiosis and life in the current phase of
development in the social reproduction system, *human beings must at their very earliest transform from rational animals into reasonable animals.*

The dialogic relation between self and other (the other from self and the other of self) is a condition for continuity in the creative process. A driving force in this creative process is love in the sense of *agape.* According to Peirce, the most advanced developments in reason and knowledge are based on the creative power of reasonableness and the transformative suasions of agape. Thus conceived, reasonableness is endowed with the power of transforming one’s horror of the stranger, the alien, one’s fear of the other understood as the fear one experiences of the other foreign to oneself, into sympathy for the other.

Developing Peirce’s discourse in the direction of Levinas’s philosophy of subjectivity, let us add that under the hardened crust of identity, the subject, through love, rediscovers its fear for the other, for the other’s safety, fear that renders one incessantly restless and preoccupied for the other. Love, reasonableness, creativity are grounded in the logic of otherness and dialogism and together orient the evolutionary development of human consciousness.

While working on pragmaticism with reference to the problem of self considered as a set of actions, practices, habits, Peirce identifies ‘power’ as opposed to ‘force’ as a fundamental characteristic of the self. The self is a center oriented toward an end, an agent devoted to a more or less integrated set of ‘purposes.’ This relates to what Welby understands with the terms ‘purport’ or ‘ultimate value’ in her description of signifying value in relation to the third element of her meaning triad, that is, ‘significance.’ Power is not ‘brute force’ but the ‘creative power of reasonableness,’ which by virtue of its agapastic orientation rules over all other forms of power (cf. *CP* 5.520). Power, that is, the ideal of reasonableness is the capacity to respond to the attraction exerted upon self by the other; power
and reasonableness are related to the capacity for response to the other and the modality of such response is dialogue.

The relation between the humility and fragility of self, on the one side, and the risks implied in venturing toward the other, on the other side, was portrayed by Plato in his myth about Eros (in the *Symposium*), an intermediate divinity or demon generated by Penia (poverty, need) and Poros (the God of ingenuity), capable of finding his way even when it is hidden. With reference to the human world, Welby described the connection between self enrichment and risky opening toward others as a condition for evolution. Such connection engenders an orientation which may be described in terms of the critique of ‘being satisfied,’ therefore, in terms of ‘transcendence’ with respect to reality as it is, to ontological being that is given and determined once and for all: ‘We all tend now, men and women, to be satisfied [...] with things as they are. But we have all entered the world precisely to be dissatisfied with it,’ says Welby in her unpublished manuscripts mentioned above. ‘Dissatisfaction’ is an important ingredient in the concept of ‘mother sense’ and signals the need to recover the critical instance of the human intellectual capacity. Thanks especially to the procedures of abductive logic this critical instance allows for innovation, prevision and ‘translation’ in the broadest sense possible, that is, translation understood as interpretation and verification of verbal and nonverbal signs beyond the limits of interlingual translation.

In a letter of 21 January 1909, Welby agreed with Peirce that logic is the ‘ethics of the intellect,’ which she related to her own concept of ‘mother-sense’ or ‘primal sense’: ‘Of course I assent to your definition of a logical inference, and agree that Logic is in fact an application of morality in the largest and highest sense of the word. That is entirely consonant with the witness of Primal Sense’ (in Hardwick 1977: 91). Scientific reasoning ensues from agapastic logical procedures (Peirce), from ‘primal sense’ (Welby), therefore from the courage of admitting to the structural
necessity for signs in becoming of inexactitude, vagueness, instability and crisis.

33. Musical semiosis, semiotics and the vocation for life

Discussions on music and musicology (as for most other disciplines) often focus on epistemological issues concerning how subject matter, methods, and ways of presentation can be understood as sign process. But music is not just another subject among many others in semiotics. In the first and second volumes of the *Semiotik/Semiotics* Handbook music is treated as a topic in the study of signs, analyzed in different cultures and eras in Western history (Ancient Greece and Rome, Art. 43, by Albrecht Riethmüller; Latin Middle Ages, Art. 54, by Franco Alberto Gallo; from Renaissance to early 19th century, Art. 68, by Mario Baroni; from the 19th century to the present, Art. 81, by Eero Tarasti; and an article on semiotics of music, Art. 152, by Guerino Mazzola).

With respect to semiotics and other sign and language sciences, music has proven to be a difficult topic to deal with in light of the verbal language paradigm. The language of music is that which most resists to phonocentric approaches to semiosis. Semiotics of music must answer the question: ‘which semiotics for semiotics of music?’ When referring to music, semiotics must be ready to interrogate its own categories and methods. Music can be understood as a sign process, on the condition that semiotics is ‘semiotics of music.’ In the latter expression ‘of music’ is a subject genitive, i.e., ‘semiotics of music’ not in the sense of semiotics as applied to music, but music as a semiotic perspective, semiotics as proposed by music. Given that music cannot be conceived without *listening*, semiotics of music is *semiotics* (indeed general semiotics) of *listening*. Instead of questioning different types of signs on the basis of pre-existing categories, semiotics should firstly take the attitude of listening. Global semiotics is global not only in terms of extension but first and

Listening evokes auscultation, a medical attitude. In Ancient Greece music was thought to be therapeutic. On the other hand, semiotics originates from semeiotics, classified by Galen as one of the principal branches of medicine (on sign conceptions in relation to medicine in Ancient Greece, see Art. 45, by Volker Langhoff, S/S, 1: 912-921; on the medical origin of semiotics, see Sebeok 1994b: 50-54; on Galen in medical semiotics, see Sebeok 2001b: 44-58). Besides auscultation and other ways of analyzing symptoms, diagnosis and anamnesis, following Galen, include listening to the patient describe his/her ailments.

Medicine today is functional to ‘bio-power,’ to promoting techniques of subordination of the body to the knowledge-power of biopolitics (denounced by Michel Foucault). Medicine contributes to the controlled insertion of bodies into the production system. With its specialism and manipulation of bodies as self-sufficient entities, medicine strengthens the dominant conception of the individual as belonging to separate spheres that are indifferent to each other. In this context, listening becomes ‘direct, univocal listening,’ imposed by the Law (Barthes and Havas 1977: 989), the ‘order of discourse’ (Foucault 1970), ‘applied listening,’ ‘wanting to hear,’ imposition to speak and, therefore, to say univocally. Listening is one thing, wanting to hear is another. Listening is answering comprehension, responsive understanding: ‘listening speaks,’ says Barthes (Barthes and Havas 1977: 990) similarly to Bakhtin; listening focuses on signs in their constitutive dialogism. By excluding responsive listening, to want to hear or applied listening belongs to a ‘closed discourse universe’ (Marcuse) which fixes questioning and responsive roles and separates listening from responsive understanding. Listening understood as dialogue and answering comprehension continuously produces new signifiers and interpretants without ever fixing sense. Instead, ‘applied’ listening fixes signifiers and
interpretants in a rigid network of speech roles: it maintains the ‘ancient places of the believer, the disciple, the patient’ (Barthes and Havas 1977: 990).

Listening is decisive for global semiotics, for the capacity to understand the entire semiotic universe. Listening is necessary for a critical discussion of separatism and of different trends that tend to take the part for the whole, whether by mistake or in bad faith, as in the case of exasperated individualism in social and cultural life and the current ‘crisis of overspecialization’ in scientific research (S/S, 1: xxvi-xxxiv). The capacity for listening is a condition for connecting semiotics to its early vocation as medical semiotics, described especially by Sebeok. If semiotics is interested in life over the whole planet given that life and semiosis converge, and if one of the original reasons for studying signs was ‘health,’ a nonnegligible task of semiotics today in the era of globalization is to call attention to the need to care for life in its globality.

34. Responsibility and semioethics

With the spread of ‘bio-power’ and the controlled insertion of bodies into the production system, global communication and the concept of the individual as a separate and self-sufficient entity develop together. In global communication the body is experienced as an isolated biological entity that belongs to the individual. This has led to the almost total extinction of cultural practices and worldviews based on intercorporeity, interdependency, exposition and opening of the body. Such a condition emerges very clearly if we compare the private and static conception of the body in today’ system of global production-communication to ‘grotesque realism’ in medieval popular culture, as theorized by Bakhtin (1965).

Foucault (but Rossi-Landi too had already analyzed the phenomenon in the 1970s) maintains that division in the sense of separation among the sciences is functional to the ideological-social necessities of the ‘new
cannon of the individualized body’ (Bakhtin). This in turn is functional to
the controlled insertion of bodies into today’s reproduction system.

A global and detotalizing approach to semiotics calls for opening to
the other, the capacity for listening to the other, therefore for dialogic
interrelation with the other. Such an approach to semiotics privileges the
tendency toward detotalization rather than totalization. Otherness opens
the totality to infinity or to ‘infinite semiosis,’ which leads beyond the
cognitive or symbolic order to enter the ethic and pragmatic orders,
opening to the condition of infinite involvement with the other, of
responsibility toward the other.

Such considerations orient semiotics according to a plan that is not
the expression of a specific ideology. Instead, semiotics thus described
concerns behavior connected with awareness of human responsibility as a
‘semiotic animal’. Properly understood, the ‘semiotic animal’ is a
responsible agent with a capacity for signs of signs, that is, for mediation,
reflection, and awareness in relation to semiosis over the entire planet. In
this sense global semiotics must be adequately founded in cognitive
semiotics, but it must also be open to a third dimension beyond the
quantitative and the theoretical, that is, the ethical which concerns the
goals toward which we strive. We propose to designate this dimension with
the expression ‘semioethics’ (see Petrilli and Ponzio 2003b, 2005).

To meet its commitment to the ‘health of semiosis’ and to cultivate
the capacity for understanding the entire semiosic universe, semiotics must
continuously refine its auditory and critical functions, that is, the capacity
for listening and critique. And to accomplish the task the trichotomy that
distinguishes between (1) cognitive semiotics, (2) global semiotics, and (3)
semioethics is fundamental, not only theoretically but also for therapeutic
reasons.
35. Semioethics and humanism

Semioethics proposes a new form of humanism. It is committed in ethical and pragmatic terms, it aims to transcend separatism among the sciences (and relates the natural and the logico-mathematical sciences to the historical-social or human sciences), and it evidences the relation between humanism and alterity.

Following Levinas (cf. *Humanisme de l’autre homme*, 1972), this new form of humanism can be called the humanism of alterity. Traditionally, human rights have been based on the logic of identity, leaving out from the very concept of ‘human rights’ the rights of the other. This approach needs to be counteracted by the humanism of alterity where the rights of the other are the first to be recognized, where the other is not only the other *beyond self*, but also the self’s very own other, the other *of self*. The self characteristically removes, suffocates, and segregates otherness which it sacrifices to identity. But identity thus achieved is fictitious, and all efforts made to maintain it are destined to fail.

Semiotics contributes to the humanism of alterity by bringing to light the extension and consistency of the sign network interconnecting each and every one of us to every other. This holds true both on a synchronic and diachronic level: communication is spreading at a world-wide and global level, and involves human behavior, individual and collective, in all its aspects. The sign network concerns the semiosphere as constructed by humankind, human culture, its signs, symbols, artifacts, etc.; but global semiotics teaches us that this semiosphere is part of a far broader semiosphere, that is, the semiobiosphere, which forms the habitat of humanity (the matrix whence we sprang and the stage on which we are destined to act).

Semiotics has demonstrated that whatever is human involves signs. Indeed, it implies more than this: whatever is simply alive involves signs. This is as far as cognitive semiotics and global semiotics reach. However,
semioethics pushes this awareness further in the direction of ethics and calls our attention to the problem of responsibility that is inescapable at the most radical level (that of defining commitments and values). Our ethos, but more than this, the cosmos itself falls within the scope of our responsibility. Among other things, this means that we must interpret the sign behavior of human beings in light of the hypothesis that if all the human involves signs, all signs in turn are human. However, this humanistic commitment does not mean to reassert humanity’s (monologic) identity yet again, nor to propose another form of anthropocentrism. On the contrary, this commitment implies a radical operation of decentralization, nothing less than a Copernican revolution. As Welby would say, ‘geocentrism’ must be transcended, then ‘heliocentrism’ itself, until we approximate a truly cosmic perspective. This perspective itself is an integral part of our ultimate end, a point where global semiotics and semioethics intersect. Otherness (or alterity) more than anything else is at stake in relation to the question of human responsibility and, therefore, of humanism as we are describing it (see also Cobley 2007a,d). But the sense of alterity must be pushed further than what we have described so far: it is not only a question of the otherness of our neighbor or even of another person at a distance (in truth now close thanks to communication channels at our disposal); otherness also refers to forms of life most distant from us in genetic terms.

Reformulating a famous saying by Terrence (‘homo sum: humani nihil a me alienum puto’), Roman Jakobson (1963) asserted that: ‘linguista sum: linguistici nihil a me alienum puto’. This commitment on the part of the semiotician to all that is linguistic, indeed, endowed with sign value (not only relatively to anthroposemiosis nor just to zoosemiosis, but to the whole semiobiosphere), is an ethical commitment beyond the strictly cognitive. This commitment involves concern not only in the sense of ‘being concerned with...’, but also in the sense of ‘being concerned for...’, ‘taking
care of...’. Viewed from this perspective, concern, taking care of, responsibility is not even that of the ‘linguist’ nor of the ‘semiotician’. Developing Jakobson we may claim that ‘homo sum,’ and, therefore, we are committed as humans, and as humans we are not only semiosic animals (like all other animals), but also semiotic animals (in this sense unique). Consequently, nothing semiosic, in other words the entire biosphere (and not just the human) and the evolutionary cosmos from which it derives, ‘a me alienum puto.’

36. Bioethics, global semiotics and semioethics
An adequate treatment of problems relevant to bioethics with the instruments and methodology of global semiotics or semiotics of life requires a third type of contextualization beyond the phenomenological and ontological, that is, the socioeconomic in a global communication-production system (cf. Petrilli and Ponzio 2005). Phenomenological, ontological, socioeconomic contexts are closely interrelated from the perspective of ethics. In fact, when we consider how semiotics, understood as global semiotics, can contribute to bioethics in the contest of global communication, it is clear that it is faced with an enormous responsibility: that of bringing to surface the limits that characterize present-day communication-production society. Semiotics must now be ready to denounce the dangers inherent in this global system for life over the entire planet.

We know that the expression ‘global communication’ indicates the present phase in the development of the late capitalist system, and that it can be understood in at least two different ways: 1) as indicating the extension of communication over the entire planet; and 2) as indicating the tendency of communication to accommodate itself realistically to the world as it is. Globalization implies that communication is omnipresent throughout the entire productive cycle – that is, pervades not only
exchange relations, as in earlier phases in socioeconomic development, but also the processes of production and consumption. Globalization is tantamount to heavy interference by communication-production not only in human life, but also in life in general over the entire planet.

Thus the expression global ‘communication-production’ not only refers to the fact that the communication network has expanded at a worldwide level, similarly to the market based on equal exchange, but also to the fact that life in its entirety – including all aspects of human life – has been incorporated into the communication-production system. These include development, well-being and consumerism as well as underdevelopment, poverty and impossibility to survive; health and sickness; normality and deviation; integration and emargination; employment and unemployment; transfer functional to the work-force characteristic of emigration and transfer of peoples characteristic of migration and denial of their request for hospitality; circulation of legal commodities and circulation of illegal goods, from drugs to human organs, to ‘non-conventional’ weapons. As anticipated, this process of incorporation is not limited to human life alone. Life in all its aspects over the entire planet is now inexorably implied (even compromised and put at risk) in today’s communication-production system.

As noted earlier, a full understanding of global communication today implies a full understanding of the risks involved by global communication, including the risk of communication coming to an end. This is not only the risk of ‘incommunicability’ understood as a subjective-individualistic condition provoked by transition to the presentday global communication system. If we accept the axiom that communication and life converge, the risk today that communication may come to an end is the risk that life on the planet Earth may come to an end – consider our enormous potential for destruction by comparison with preceding phases in the development of the social reproduction system.
After observing that the spread of ‘bio-power’ and global communication have contributed to conceiving the individual as a separate and self-sufficient entity, we must now emphasize that the technologies of separation as applied to human bodies, to human interests, to the life of individual and collective subjects, all serve production as well as identification of production with consumption – a characteristic of today’s social reproductive system. With regard to all this, and thanks to its ontological perspective, global semiotics (or semiotics of life), if nothing else, can count a whole series of signs showing how each aspect of individual life is constantly interrelated to all other forms of life over the planet. To acknowledge such interconnection is to suggest a condition of responsibility that exceeds by far all positive rights and all limited and restricted responsibilities with alibis. And to take such a stand is ever more urgent the more the reason of production and of global communication at the service of production imposes ecological conditions that impede and distort communication between the body and the environment.

Social reproduction in the global communication-production system is destructive. Reproduction of the productive cycle itself is destructive. The productive cycle destroys: (a) machines, which are constantly replaced with new machines – not because they are worn out but because they are no longer competitive; (b) jobs, because it makes way for automation, which further increases unemployment; (c) products on the market, eliciting new forms of consumerism ruled by the logic of reproducing the same productive cycle; (d) pre-existing products, which once purchased would otherwise exhaust the demand, and which in any case are designed to become immediately outdated and obsolete so that new and similar products can be introduced to the market; and (e) commodities and markets, which are unable to resist competition any further in the context of the global communication-production system.
The *conatus essendi* of communication-production destroys natural environments and life forms. It also destroys different types of economic systems and different types of cultural systems, all of which tend to be homologated by market logic. In today’s global communication-production world, needs and habits are rendered identical (although the possibility of satisfying such needs is never identical); even desires and the imaginary tend to be homologated and rendered identical. The *conatus essendi* of communication-production destroys traditions and cultural patrimonies that conflict with or impede the logic of development, productivity and competition, or that are simply useless or non-functional to such logic. The communication-production system tends to destroy those productive forces which escape the logic of production. In this way it penalizes intelligence, inventiveness, and creativity which are overruled by or subjected to ‘market reason’ (which cannot be avoided at a time when production must necessarily invest in ‘human resources’). The destructive character of today’s production system is also manifest in the fact that it produces growing areas of underdevelopment as the *very condition for development*, areas of human exploitation and misery to the point of non-survival. This logic underpins the expanding phenomenon of *migration*, which so-called ‘developed’ countries are no longer able to contain owing to objective internal-space limitations – and no doubt this problem has reached greater dimensions today than in earlier phases in the development of the social system.

To globalize the market is destructive – that is to say, to globalize the status of merchandise by applying it indiscriminately to anything, entities and relationships, is destructive. And the more merchandise is illegal and prohibited – think of drugs, human organs, children, uteruses, and so on – the more the increase in cost. The principle of exploiting the work of other people is destructive. Obviously, the more work produces profit, the less it costs; and with the aid of a powerful support system such
as the one offered by global communication-production, developed
countries are ever more turning to low-cost work in underdeveloped
countries (‘stay where you are, and we will bring work to you’). The
disgrace of the communication-production world is especially obvious in
the spreading exploitation of child labor. Much needs to be said and done
about children as today’s privileged victims of underdevelopment, about
children living in misery, sickness, and war, on the streets, in the workforce,
on the market.

The destructive character of worldwide communication-production
is evidenced by war, which is always a scandal. Global communication-
production is the communication-production of war. War calls for new and
flourishing markets for the communication-production of conventional and
unconventional weapons. War also requires widespread approval
acknowledging it as just and necessary, as a necessary means of defence
against the growing danger of the menacing ‘other’: in this way, war
becomes a means of achieving respect for the rights of ‘identity’ and of
‘difference.’ But the truth is that identities and differences are neither
threatened nor destroyed by the ‘other.’ The real menace is today’s social
system which encourages and promotes identity and difference while
undermining them and rendering them fictitious and phantasmal. And this
is exactly why we cling to such values so passionately, so unreasonably,
following a logic that fits the communication-production of war to
perfection.

An ontological reformulation of bioethics in the light of global
semiotics, or semiotics of life, that keeps account of global communication
and its socioeconomic context, must highlight the need for two
fundamental principles – what we propose to call dispossession and
extralocalization. These principles imply reference to a condition that is
experienced by the human individual as a living body – that is, the
condition of interconnectedness with all other life forms over the planet, of
diachronic and synchronic intercorporeity. Specifically, we propose the concept of ‘dispossession’ to indicate the need to dispossess the human body and liberate it from the techniques that encourage and favor subordination to the knowledge-power of biopolitics; the term ‘extralocalization’ for the need to get free of the chronotopic coordinates of contemporaneity, that is, of projects, structures and roles that serve to reproduce the socioeconomic order of global communication.

The principles of dispossession and extralocalization are evidenced by the body’s tendency to ‘escape without rest’ from the techniques that would dominate and control it; above all, by the body’s ‘persistence in dying.’ It follows that the principles of dispossession and extralocalization must be taken into account in the prolegomena for an approach to bioethics that aims to be critical, philosophical, and theoretical. This is the condition for recognition of their moral and juridical status.

Reflection on problems relevant to bioethics today in the context from which they emerge – the context of globalization – requires an approach that is just as global (cf. Petrilli and Ponzio 2000a; and Ponzio 1999). Here, the allusion is to the need for an approach that is not simply limited to partial and sectorial aspects of the communication-production system in the light of internal perspectives serving the system itself; also, for an approach that is not limited on an empirical level to psychological subjects, to subjects reduced to parameters imposed by the social sciences – that is to say, to subjects measurable in terms of statistics. Global communication-production calls for a methodological and theoretical perspective that is just as global as the phenomenon under observation, a perspective capable of understanding the logic of global communication-production and, therefore, of proceeding to an adequate critique. Analysis of today’s global communication society in all its complexity calls for conceptual instruments appropriate to the task. This means that these instruments must be as precise as possible, and that they can only be
furnished by a *new theory of communication*. They must also be as *rigorous* as possible, and from this perspective they can only be furnished by an adequate philosophical grounding. (On the problem of communication and communication theories, see also Cobley 1996, 2004a, b, 2006).

To summarize and conclude: an adequate understanding of global communication-production calls for an approach to communication and semiosis that is just as global. Although the specialized sciences taken separately are not in a position to provide such a global view, the general science of signs or semiotics as it is now taking shape on the international scene in terms of *global semiotics* is, thanks especially to Thomas A. Sebeok and his far-sighted research.

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