

# Language as Primary Modeling and Natural Languages: A Biosemiotic Perspective

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**Abstract** Our paper concerns general linguistics and discusses standpoints in both taxonomic and generative-transformational structuralism. The question that linguistics most often fails to address is “why so many languages?”; this is the enigma of Babel. We attempt an answer in a biosemiotic key, with special reference to Sebeok’s global semiotics. What is implied is the problem not only of the plurality of natural languages (Fr. *langue*/It. *lingua*), but also of the different “languages” (Fr. *langage*/It. *linguaggio*) of different discourse genres, as well as the infinite differentiation in individual speech. Babel does not only concern difference among languages (Fr. *langue*/It. *lingua*), but also the different ways in which single individuals use the word. Far from acting as an obstacle to communication, the otherness relation among the word of single individuals is the condition for communication to obtain, for expression and understanding.

**Keywords** Communication • Enigma of Babel • General linguistics • Language • Modeling • Natural language • Otherness • Plurilingualism • Understanding • Word

## General Linguistics and Global Semiotics

General linguistics presupposes general semiotics simply because definition of the *verbal sign* presupposes definition of the *sign in general*. The sign model, in turn, is relative to the *vastness* and *extension* of the horizon of semiotics. Very often this model has been constructed neglecting a whole series of different types of signs – either because they are not considered as signs or because they are not considered to be semiotically relevant. Consequently, it is important that general semiotics should not be constructed on the basis of a limited survey of signs passed off as complete. In other words, the general science of signs must be careful not to elect a *part* and describe it as the *totality*.

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This essay develops a series of problematics presented in Ponzio 2002; Petrilli and Ponzio 2002a; Petrilli 2014.

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As claimed in the entry “Thomas A. Sebeok” (by John Deely) in *Encyclopedia of Semiotics*,<sup>1</sup> a turning point in the history of semiotics occurred during the first half of the 1960s, when Thomas A. Sebeok (1920–2001) extended the boundaries of the science of signs well beyond the limits of what then was commonly recognized as “semiology”.

The latter, semiology, is based on the verbal paradigm and suffers from the *pars pro toto* fallacy. That is, it exchanges the part for the whole. Sebeok calls this tendency in the study of signs the “minor tradition”. He opposes it to what he calls the “major” tradition, considering the temporal and thematic extension of the latter. The major tradition is represented by John Locke (1632–1704) and Charles Sanders Peirce (1839–1914) and goes back to early studies on signs and symptoms (ancient medical *semeiotics* or symptomatology) with Hippocrates (460 BC–377 BC) and Galen (circa 130 AD–circa 210 AD).

Thanks to Sebeok semiotics today emerges as “global semiotics”.<sup>2</sup> In fact, through numerous publications he promotes a new vision of semiotics where sign sciences converge with life sciences. The underlying assumption is that *living matter and sign matter converge*. As a result of its “global” or “holistic” approach, semiotic research today on the “life of signs” is directly interested in the “signs of life”. Therefore, from the perspective of *global semiotics*, *semiosis* (that is, the relation, or process or situation in which something is a sign) and *life* converge given that semiosis is the criterial attribute of life. After Sebeok’s work – amply inspired by Peirce, but also Charles Morris (1901–1979) and Roman Jakobson (1896–1982), Sebeok’s immediate masters – our conception of both the semiotic field and of the history of semiotics has changed significantly.

It follows that global semiotics also presents itself as a *critique* of semiotic theory and practice vitiated by oversimplifying anthropocentric and glottocentric tendencies.

Global semiotics extends its gaze well beyond the signs that human beings use to communicate – the subject matter of semiology as formulated by Ferdinand de Saussure (1857–1913) – and includes not only *zoosemiotics* (term introduced by Sebeok<sup>3</sup>), comprehensive of *anthroposemiotics* and the study of the signs of the other great kingdoms (*phytosemiotics* and *mycosemiotics*), but also *microsemiotics* and *endosemiotics*. As such global semiotics converges with *biosemiotics*.

The subject matter of global semiotics or *semiotics of life*<sup>4</sup> is the *semiosphere* conceived as converging with the *biosphere*. The term *semiosphere* is taken from the work of Juri Lotman (1922–1993),<sup>5</sup> but is understood by Sebeok in a far broader sense. In fact, Lotman limits the field of reference of the term *semiosphere* to human culture and states that outside the semiosphere thus described there is no communication.<sup>6</sup> On the contrary, from the perspective of global semiotics which maintains that *semiosis* converges with *life*, the semiosphere is identified with the *biosphere*, a term used by Vladimir Vernadsky (1863–1945) in 1926,<sup>7</sup> and therefore is understood as a

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<sup>1</sup> Deely 1998.

<sup>2</sup> Sebeok 2001.

<sup>3</sup> Sebeok 1963.

<sup>4</sup> Petrilli and Ponzio 2001 and 2002a.

<sup>5</sup> Lotman 1991.

<sup>6</sup> *Ibid.*, pp. 123–124.

<sup>7</sup> Vernadskij 1926.

'semiobiosphere'. The semiosphere in Lotman's sense is limited to human culture, that is, to *anthroposemiosis*, consequently to the verbal and nonverbal signs forming its languages (Fr. *langages*/It. *linguaggi*). As such Lotman's semiosphere only accounts for a limited portion of the semiobiosphere. Instead, taken in its totality, the semiosphere extends across the whole sign network that goes to form the living world.

Considered in the context of global semiotics, general linguistics is part of *anthroposemiotics*. General linguistics studies verbal language, oral and written. However, it neither focuses on a given natural language (Fr. *langue*/It. *lingua*), nor even on a given discourse genre or literary genre. Instead, general linguistics focuses on certain general aspects (at times with claims to universality) as they characteristically present themselves in a given natural language, as the condition itself of its being a language.

To contextualize linguistics in global semiotics is not only functional to a classification of the sciences, but it also guarantees that the general *sign* concept used by linguistics is drawn from general semiotics and, therefore, is truly general and not partial.

## Modeling, Communication and Dialogue

Now we shall explain two notions which are interconnected and fundamental in semiotics: *modeling* and *dialogism*. Without them it is not possible to understand a third notion: *communication*. This notion is generally privileged in the study of signs over the other two.

The concept of modeling comes from the so-called Tartu-Moscow school (A.A. Zaliznjak, V.V. Ivanov, V.N. Toporov, Ju.M. Lotman<sup>8</sup>). It is applied to natural language (Fr. *langue*/It. *lingua*), which it describes as a "primary modeling system",<sup>9</sup> and to the other human cultural systems described as "secondary modeling systems".

On our part, instead, we implement the term *modeling* in Sebeok's sense. Sebeok extends the concept beyond the sphere of anthroposemiosis and connects it to the biologist Jakob von Uexküll and his concept of *Umwelt* ('surrounding world').<sup>10</sup> In Sebeok's interpretation, *Umwelt* means 'external world model'. On the basis of research in biosemiotics, we know that the modeling capacity can be observed in all life-forms.<sup>11</sup> "Modeling systems theory" has recently been reformulated by Sebeok in collaboration with Marcel Danesi.<sup>12</sup> They study semiotic phenomena as modeling processes. In light of semiotics oriented in the sense of modeling systems theory, semiosis can be defined as a capacity with which all life-forms are endowed to produce and understand signs according to specific models, organizing perceptive input as established by each species.<sup>13</sup>

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<sup>8</sup> Cf. Lucid (ed.), 1977; Rudy 1986.

<sup>9</sup> Cf. Deely 2007.

<sup>10</sup> Cf. Kull 2010.

<sup>11</sup> Cf. Sebeok 1979, pp. 49–58, 68, 82 and 1991, pp. 117–127.

<sup>12</sup> Sebeok and Danesi 2000.

<sup>13</sup> *Ibid.*, p. 5.

The applied study of modeling systems theory is called “systems analysis”. It distinguishes between *primary*, *secondary* and *tertiary* modeling. The primary modeling system is the innate capacity for simulative modeling, that is, a system that enables all organisms to simulate the world in species-specific ways.<sup>14</sup>

Sebeok introduces the term *language* for the primary modeling system specific to the genus *Homo*. The *primary modeling system* is not natural language (Fr. *langue*/It. *lingua*), as instead the Tartu-Moscow school maintains, but rather language in the sense of the French *langage* and Italian *linguaggio*. Instead, natural language (Fr. *langue*/It. *lingua*) appears quite late in human evolution and is a *secondary modeling system*. Consequently, cultural sign systems that presuppose natural languages are *tertiary modeling systems*.

Secondary modeling subtends modeling processes of both the indicational and extensional types. Indicational modeling has been registered in various living species. Instead, extensional modeling is a uniquely human capacity insofar as it presupposes *language* (primary modeling system specific to human beings alone) which Sebeok distinguishes from speech, from natural language, *lingua-langue*, a secondary modeling system.<sup>15</sup>

Tertiary modeling subtends highly abstract modeling processes of the symbolical type<sup>16</sup> which in addition to language understood as *linguaggio-langage* also presuppose natural language, *lingua-langue*.

Communication presupposes modeling, given that communication occurs internally to a world produced by the modeling processes it presupposes. It is precisely by considering the communication/modeling relation and the fact that the communicative relation is impossible if not on the basis of modeling able to engender an *Umwelt*, as understood by J. von Uexküll, that we can formulate a response to Winfried Nöth’s question “Is communication possible?” and thus escape the paradoxes produced by reflecting on the notion of communication taken in isolation.<sup>17</sup> Modeling systems, in turn, also evolve from communication as it occurs in the species, and from the environment – being the context of modeling produced by adaptation. But communication always occurs on the basis of the type of modeling that characterizes a species. For example, as a system specific to the genus *Homo*, therefore already present in hominids, language regulates communication with the environment. Evolution of the species in the genus *Homo* to *Homo sapiens sapiens* occurs through adaptation, but necessarily according to its species-specific modeling system (which from the very moment of its appearance assigns it to a special niche with respect to other species, as close as they may be homologically).

By *dialogue*<sup>18</sup> is understood the way in which an organism in its specific *Umwelt* relates to the intraspecific and extraspecific organic, and to the inorganic. Semiosis

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<sup>14</sup> *Ibid.*, pp. 44–48.

<sup>15</sup> *Ibid.*, pp. 82–95.

<sup>16</sup> *Ibid.*, pp. 120–129.

<sup>17</sup> Nöth 2013.

<sup>18</sup> We obviously cannot dwell now upon Paul Copley’s reconstruction of the relation between our conception of “dialogue” and that of Emmanuel Levinas and of Mikhail Bakhtin whose position is

is generally *dialogic* (cf. below). The notion of dialogism does not contradict, but rather supplements and confirms those notions that insist on the autonomy of the living organism, for example, J. von Uexküll's *functional cycle* and Humberto Maturana and Francisco Varela's *autopoiesis*. Furthermore, *dialogue* must be distinguished from *communication*. Communication is only one aspect of semiosis. The other two are *modeling* and *dialogism*, as we have already stated.<sup>19</sup>

Dialogism, modeling and communication – which in the human being are characterized species-specifically – belong to semiosis in general and for this reason can be traced, in different forms, degrees and modalities, in all living beings. The dialogic character of verbal semiosis, its modeling and communicative functions, are specific characterizations of the human species of capacities that can be traced in semiosis generally in any living being. We will describe this condition more closely in the sections that follow. In them we present a series of considerations we must necessarily keep account of in the study of the semiosis of language understood as '*langage/linguaggio*' (primary modeling), and as '*langue/lingua*' (secondary modeling), and of other cultural sign systems that presuppose language understood as '*langue/lingua*' (tertiary modeling).

## Language and Endosemiotic Systems

In his essay "The evolution of semiosis", Sebeok begins from Peirce's definition of semiosis as an irreducible teleonomic process, consisting in the relation between a sign, its object and its actual or potential interpretant.<sup>20</sup> On the basis of this triadic model, Sebeok takes his distances from semiotic theories that claim to explain semiosis through such notions as *information*, *code*, *message*, all of which express a dichotomic vision of the sign. All the same, Sebeok uses such notions to explain the evolution of semiosis on the planet Earth. He resorts to them to explain the crucial difference between non-semiotic, quasi-semiotic or proto-semiotic phenomena relating to non-biological atomic interactions and inorganic molecules, on the one hand, and semiosis as the criterial attribute of life, on the other.

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particularly interesting in the present context given his focus on corporeity and the biological sciences. In any case, it is above all owing to the relation Copley establishes with Th.A. Sebeok that we wish to signal his "brief note" of 2007 (Copley 2007). For a very effective synthesis of Sebeok's contribution to semiotics and to biosemiotics in its current configuration, cf. also Deely 1998. The implications of the relation between dialogue and alterity (or otherness) from a biosemiotic perspective and what Peirce calls "agapasm" and "evolutionary love" are evidenced, passing through Levinas, by Donald Favareau (Favareau 2013).

<sup>19</sup>A relation comes to be established among authors who have enquired into the "origins" of life and its different worlds from different perspectives. These authors include Bakhtin, Driesch, J. von Uexküll (cf. the essay on "contemporary vitalism," in *Bakhtin e il suo circolo* 2014, presented in a bilingual – Russian-Italian – edition, originally published by Ivan Kanaev, in a specialized journal of biology, in Russia, in 1926, but in reality written by Bakhtin). On the relation among these authors, taken into consideration as part of a dialogue with ourselves (lasting several years now), cf. Kull 2007 and 2013.

<sup>20</sup>Sebeok 1997, p. 436.

As regards the evolutionary process of semiosis, Sebeok implements *information* and *semiosis* to indicate two different evolutionary phases. Semiosis is what distinguishes the animate from the inanimate. Before semiosis there was information. The essence of information is change; the prerequisite of semiosis is life. Information is possible without semiosis. But semiosis is not possible without information. Semiosis and life include information, they imply it. “Cosmic expansion is accompanied by a departure from a state of maximum entropy, and information (as a measure of the nonuniform, orderly properties of physical systems) evolved out of that initial state of utter chaos”.<sup>21</sup>

That the terms *information*, *code*, *message* characterize so-called “codification semiotics” does not stop them from being implemented again by trends in so-called “semiotics of interpretation”, as in the case of global semiotics or semiotics of life. In his explanation of the functional cycle, Thure von Uexküll (1908–2004) implements the terms *code* and *context* connecting them to the Peircean triad, representamen, interpretant and object or referent.<sup>22</sup> Any term whatsoever can be used in semiotics so long as it is defined rigorously by other terms.

The term *code* has been employed to characterize both properly human sign systems as well as human and non-human endosemiotic sign systems; for example, to characterize verbal language (*langue*) as much as the genotypical system, or “genetic code”. Influenced by the predominance of linguistics in the study of signs, initially the terms *code* and *language* were used indifferently for both verbal and nonverbal sign systems, including the genotypical. But this led to what Sebeok describes as much “fruitless debate”<sup>23</sup> about whether the genetic code is (like) a language or not.

Once the modeling procedure specific to mankind – which subtends “speech” or the so-called “*langue/lingua*” – is named *language*, it is legitimate to ask whether language (*langage/linguaggio*) (including verbal language) and the genetic code device are homologous. It would seem so. As Sebeok observes, this is determined by the principle of articulation traceable in both language and the genetic code, that is, by the fact that both function on the basis of what he calls *syntax*, but which is better denominated *syntactics*.<sup>24</sup> The fact that language, a secondary modeling system, incorporates a syntactic component (articulation), as Sebeok says, is singular: this feature is not present in other zoosemiotic systems, although it abounds in endosemiotic systems, such as the genetic code, the immune code, the metabolic code, and the neural code.<sup>25</sup>

This way, semiosis and information, the genetic code, just like other endosemiotic systems, and language, including verbal and nonverbal language, are connected by a genetic structure. Beginning from this, each system is then characterized in terms of its own specific quality. In the information-semiosis-semiotic and non-

<sup>21</sup> *Ibid.*, pp. 436–437; cf. also Sebeok 1986, pp. 15–16.

<sup>22</sup> Uexküll 1998, art. 110, pp. 2187–2188.

<sup>23</sup> Sebeok 1997, pp. 437–438.

<sup>24</sup> Petrilli and Ponzio 2002b and 2007.

<sup>25</sup> Sebeok 1991, pp. 57–58.

life–life *continuum* likenesses like differences are qualitative and structural. In this sense, in the case of likeness, it is not a question of *analogy* (casual and superficial likeness) but of *homology* (profound, genetic and structural likeness), to use terminology from genetic biology. This confirms the conception introduced by Ferruccio Rossi-Landi (1921–1985) when he maintains that to determine the specificity of verbal language, it will be necessary to study any homologies with other sign systems, therefore to proceed according to the homological method.<sup>26</sup>

## Binarism, Triadism and Dialogism

From what we have stated so far, it results that the dichotomies *code/message*, *information/redundancy*, *first/second articulation*, etc., can be applied to both semiosis and information. What counts is that these notions be functional to explaining the different aspects of information and of the semiotic and semiotic universe. For example, the concept of redundancy from information theory is valid both in linguistic studies of the utterance or text and in biosemiotic studies of the genetic code.

Binarism helps explain certain endosemiosis related phenomena (the term *endosemiotics* was coined by Sebeok in 1976<sup>27</sup>) as much as certain aspects of properly human semiosis. From an endosemiotic point of view, the fundamental binary opposition in the ontogenesis of an organism is that between the *ego* and *alter* concepts, studied by Sebeok in his research on the “semiotic self”.<sup>28</sup> On the other hand, we know that phonology avails itself of binary opposition to identify pairs of distinctive traits.

From the point of view of global semiotics which aims not to neglect any sign phenomenon in the planetary biosphere, binarism cannot be excluded. Implementing the expression “ecumenicalism in semiotics”, introduced by Sebeok,<sup>29</sup> we can claim that global semiotics is ecumenical because it elaborates on terms taken from information theory and code semiotics (semiology) and applies them to the vast range of semiosical phenomena, from verbal languages and cultural systems to the genetic code, the immune system, the metabolic code, and the neural code, etc., as listed above.<sup>30</sup>

Instead, what should be rejected is the orientation that establishes binarism as the only feature of semiosis or that restricts it to the cultural world. These are the fundamental limits of traditional binarism as results from the well-documented entry “Binarism”<sup>31</sup> (by Paul J. Thibault) in the *Encyclopedia of Semiotics*.<sup>32</sup> Such limits

<sup>26</sup>Rossi-Landi 1968 and 1972.

<sup>27</sup>Sebeok 1976 [1985].

<sup>28</sup>Sebeok et al. 2001.

<sup>29</sup>Sebeok 1979, pp. 61–83.

<sup>30</sup>Sebeok 1997, pp. 438–440; cf. also Bouissac (ed.), 1998.

<sup>31</sup>Thibault 1998.

<sup>32</sup>Bouissac (ed.), 1998.

are also determined by the fact that the research interests of major exponents of semiotic binarism (Ferdinand de Saussure, Nikolai Trubetzkoy, Noam Chomsky, Morris Halle, Roman Jakobson, Claude Lévi-Strauss) were restricted to the field of verbal and cultural phenomena.

As regards binarism, the vision of semiotic research as it emerges in *Semiotik/Semiotics*,<sup>33</sup> in *Encyclopedia of Semiotics*<sup>34</sup> and in Sebeok's global semiotics no doubt transcends any opposition between semioticians with a Saussurean/Hjelmslevian/Greimasian orientation<sup>35</sup> and semioticians of Peircean inspiration. These two trends in semiotics would seem to converge with the opposition between *binarism* and *triadism*, respectively. However, we believe that the central question in semiotics considered on a theoretical level as well as from the point of view of the history of these two different trends, is not the opposition between binarism and triadism.<sup>36</sup>

Instead, the opposition is between a sign model that tends to oversimplify the complex process of semiosis, on the one hand, and a sign model, like Peirce's, that would seem to account for the different aspects of a process thanks to which something is a sign, on the other.

The validity of the latter is not determined by its triadic configuration, but rather by given aspects of Peircean triadism: its categories, sign typologies, dynamism according to a model that describes signs as regulated by deferral from one interpretant to another. The categories of *firstness*, *secondness* and *thirdness*, the triad *representamen*, *object* and *interpretant*, the triadic tendency of signs in the direction of symbolicity, indexicality, and iconicity all contribute to delineating and supporting a conception of semiosis featuring otherness and dialogism.

Peircean logic is dialogic and polylogic. However, its merit does not lay in its triadic formula. Proof is Hegelian triadism which abstracts from the constitutive dialogism of life and gives rise to unilinear and monologic dialectics. Under the entry "Binarism" in *Encyclopedia of Semiotics*, Hegelian philosophy is strangely described as superseding the theory of binary opposition featured by structuralism with Claude Lévi-Strauss (1908–2009).<sup>37</sup> In his 1970–1971 notes, Mikhail Bakhtin (1895–1975) describes the formation process of Hegelian dialectics.<sup>38</sup> It has its roots in the live dialogic context of semiosis, but transforms dialogical relations into abstract concepts, judgements and standpoints of the single and solitary conscious. Peirce himself took a stand against the constitutive sclerosis of Hegelian dialectics which rather than remain open and contradictory presents itself as the expression of a hypochondriac search for the conclusion, oriented unilaterally towards a synthesis.<sup>39</sup>

<sup>33</sup> Posner et al. (eds.), 1997–2004.

<sup>34</sup> Bouissac (ed.), 1998.

<sup>35</sup> Johansen 1998; Parret 1998.

<sup>36</sup> Cf. Petrilli 2013.

<sup>37</sup> Thibault 1998, p. 81.

<sup>38</sup> Bakhtin 1970–1971 [1986].

<sup>39</sup> On the relation between *dialogue* and *dialectics* in Peirce and Bakhtin, cf. Ponzio 1984 and 1990; Ponzio et al. 2006.

The alternative in semiotics is not between binarism and triadism, but between *monologism* and *polylogism*. The limit of the sign model proposed by Saussurean semiology is not determined by binarism as such, as claimed instead by Thibault.<sup>40</sup> Rather, it is determined by the fact that binarism finds expression in the concept of *equal exchange between sign and meaning* and reduces complex linguistic life to the dichotomic scheme represented by code and message.<sup>41</sup>

## Language and the Origin of the Word

The question of the origin of speech, verbal language, is generally dismissed by the scientific community as unworthy of discussion, having given rise to unfounded discussions (an exception is the book by Giorgio Fano [1885–1963] *Origini e natura del linguaggio*<sup>42</sup>).

On the basis of more recent studies, the problem of the origin of verbal language has been reexamined and evidenced in all its complexity. One of the most systematic proposals comes from Sebeok who explains the species-specific character of *speech* (verbal language) in terms of the human primary modeling system, *language*. Moreover, he describes speech as arising at a certain point in evolution through adaptation, as a function of communication, where adaptive processes are regulated by *language* understood as ‘modeling’. Consequently, Sebeok intervened polemically and ironically on various occasions to cool down hot enthusiasm towards theories and training practices (particularly fashionable at the time in the United States of America), which aimed to demonstrate that animals can speak.

According to Sebeok’s modeling theory, *language* (understood as the ‘primary modeling system specific to *Homo*’) appeared and developed through adaptation much earlier than speech in the course of human evolution through to *Homo sapiens*. Originally, language was not a communicative device. Chomsky also maintained that language is not essentially communicative, but by *language* he understands ‘verbal language’, what Sebeok calls “speech”.<sup>43</sup> Instead, according to Sebeok, verbal language has a specific communication function from the very moment it appears. Chomsky’s theory of verbal language does not keep account of the difference between language (*langage/linguaggio*) and verbal language, and without this difference it is not possible to explain the origin, nor the functioning of verbal language.

In short, language is a *modeling device* with which the first hominid was endowed and thanks to which, from an evolutionary point of view, development was possible from the first species of *Homo* through to *Homo sapiens sapiens*.<sup>44</sup> Other animals

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<sup>40</sup>Thibault 1998. For an analysis of binarism in Saussure, cf. §222 “Binarität” in *ibid.*

<sup>41</sup>Ponzio 1990, pp. 279–280.

<sup>42</sup>Fano 1972. This book is now also available in English translation (1992).

<sup>43</sup>Ponzio 2012b.

<sup>44</sup>Sebeok 1994, pp. 117–128.

are also endowed with a modeling system through which they produce their worlds; language is that which belongs to mankind. But man's modeling system is completely different from other primary modeling systems. Its specific characteristic is what Peirce called "the play of musement" (and expression used by Sebeok as the title of one of his books<sup>45</sup>) and what Giambattista Vico (1668–1744) called "poetic logics".<sup>46</sup> These expressions refer to the human capacity, unlike other animal species, to produce multiple models, therefore, to use an expression from Gottfried Wilhelm Leibniz (1646–1716), to invent and simulate an infinite number of "possible worlds".

*Speech*, like *language*, understood as 'modeling' also appeared through adaptation, but with a communicative function, and much later with respect to language, precisely with the appearance of *Homo sapiens*. As the human species evolved, language also took on a communicative function through the process of *exaptation* (an expression introduced by Stephen Jay Gould and Elisabeth S. Vrba<sup>47</sup>), thereby empowering the communicative function of speech; and speech also took on a modeling function thereby enhancing the modeling function of language, as it materialized in each of the multiple natural languages: *language evolved as an adaptation*; whereas *speech developed out of language as a derivative exaptation* over a succeeding period of approximately two million years.<sup>48</sup> Language is the primary evolutionary adaptation that characterizes the hominid. Speech developed from language-as-modeling as a result of the evolution of physical and neurological capacities, about 300,000 years ago.

Exapted for communication first in the form of *speech* and later as *script*, language-as-modeling also enhanced the human capacity for nonverbal communication, giving rise to the development of a broad and complex range of nonverbal languages. Through a process of exaptation speech took on a modeling function in turn, thereby acting as a secondary modeling system. Such transformation favored development of the human semiotic capacity on the cognitive, organizational, inventive levels, etc. Beyond increasing the capacity for communication through speech itself as much as through nonverbal languages, speech-as-modeling favoured the proliferation and specialization of *languages* understood now not only in the sense of 'natural languages', but also of 'sectorial languages', etc.

The relation between language-as-modeling and speech has involved mutual adjustment of the encoding with the decoding capacity, of language "exapted" for communication, first for the sake of speech, for "ear and mouth work" and subsequently for script and other forms of communication, with speech for (secondary) modeling, "for mind work". All the same, absolute mutual comprehension remains a distant goal, so that the whole system still remains to be perfected.<sup>49</sup> As Sebeok observes:

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<sup>45</sup> Sebeok 1981.

<sup>46</sup> Cf. Danesi 1993.

<sup>47</sup> Gould and Vrba 1982.

<sup>48</sup> Sebeok 1986, pp. 14–16; italics ours. – S.P., A.P.

<sup>49</sup> Sebeok 1991, p. 56.

As to why this process of exaptation took several million years to accomplish, the answer seems to be that the adjustment of a species-specific mechanism for encoding language into speech, i.e. producing signs vocally, with a matching mechanism for decoding it, i.e. receiving and interpreting a stream of incoming verbal/vocal signs (sentences), must have taken that long to fine tune, a process which is far from complete (since humans have great difficulties in understanding each other's spoken messages).<sup>50</sup>

At this point, another process of exaptation in the evolution of anthroposemiosis we should note is the distinction between “manual work” and “intellectual work”. In Rossi-Landi's terminology this is the distinction between “nonlinguistic (nonverbal) work” and “linguistic (verbal) work”.<sup>51</sup> These two different types of work have only just come together,<sup>52</sup> and this as a result of developments in technology and communication. Insofar as it unites *hardware* and *software* the computer is the most obvious expression of the type of adjustment that leads towards the development of an ever more efficient communication system.

## Syntactics and Writing in Language

Plurilingualism (including “internal plurilingualism”), the multiplicity of languages, internal and external, results from the human modeling capacity to invent multiple worlds. This is the capacity for the “play of musement” or, as Vico says, for “poetic logic” proper to the human being. As much as Chomskyan linguistics insists on the creative character of (verbal) language, which presupposes an innate universal grammar (*à la* Descartes), it does not explain the proliferation of multiple natural languages (*langue/lingua*).

Before presenting itself as speech with communicative functions which subsequently renew and enhance nonverbal sign behaviors (nonverbal languages), language is a *modeling “procedure”*, that is, a construction model of the world. We prefer the term *procedure* over *system*, recovered by Sebeok from the Tartu-Moscow school.<sup>53</sup> The specific function of language-as-modeling is to signify, interpret and confer sense.

All animals have construction models of the world and following Sebeok that belonging to the human animal is denominated language. However, language differs totally from modeling procedures in other animals. What does not differ is the *type* of sign implemented (icon, index, symbol, etc.). The specific characteristic of human modeling is articulation, or as Sebeok says, *syntax*, which enables us to produce different signifying itineraries with the same objects that function as interpreted signs and interpretant signs. The term *articulation* recalls decomposition into elements. *Syntax* projects the idea of the temporal-spatial distribution of these

<sup>50</sup> Sebeok 1997, pp. 443–444.

<sup>51</sup> Rossi-Landi 1968 and 1975.

<sup>52</sup> Rossi-Landi 1985 [2006]; Petrilli and Ponzio 2005, pp. 232–296.

<sup>53</sup> Cf. Sebeok 1991, p. 49.

objects. However, *syntactics*, a term introduced by Morris to denominate one of three branches of semiotics (the other two being *semantics* and *pragmatics*), avoids confusing syntax in the linguistic-verbal sense with syntax in the sense of neopositivist logic. The term *syntactics* avoids the ambiguity connected with the word *syntax*, a term proper to linguists and neopositivists (*logical syntax* in the formulation of Rudolf Carnap [1891–1970]). The syntactics of language determines the possibility of using a finite number of elements in different combinations to produce an infinity of different meanings.

On our part, we prefer the term *writing* to *syntactics*. Writing alludes to the combinatorial procedure through which a finite number of elements produces an infinite number of senses and meanings. Writing thus described is antecedent to speech, the condition of possibility for speech. The phonetic sign itself is writing given that it only functions on the basis of combination; writing belongs to language before the stylet or pen impresses letters on tablets or on pergamen or on paper, as Emmanuel Levinas (1906–1995) says.<sup>54</sup> Therefore, language-as-modeling is writing, it subsists *avant la lettre*, before the invention of *writing* understood as ‘transcription’, that is, as a system for the transcription of vocal semiosis, before the connection with phonation and formation of natural languages.

Language today is influenced by phonetic material, while maintaining the features that characterized it antecedently to transcription. These are evidenced in the articulation of verbal language and its iconic character (signification through position, extension, as when the adjective in the superlative or the verb in the plural become longer, as pointed out by Jakobson<sup>55</sup>). When writing emerges subsequently as a secondary covering to fix vocalism, it uses space to preserve the oral word, giving it a spatial configuration.<sup>56</sup>

Articulation in verbal language (André Martinet’s double articulation) is an aspect of language-as-modeling which articulates the world on the basis of differentiation and deferral – *difference/différance*.<sup>57</sup> Articulation is firstly distancing, spacing out by language-as-modeling insofar as it is writing. To signify by positioning the same things differently is already writing in itself. Articulation *of* verbal language and *through* verbal language (secondary modeling) is achieved on the basis of signification by position.

Insofar as it is syntax, or *syntactics*, or more precisely *writing* antecedent to phonation and independent from the communicative function of transcription, language-as-modeling implements pieces that can be put together in an infinite number of different ways, thereby giving rise to an indeterminate number of models that can be dismounted to construct different models with the same pieces. So, as Sebeok says,<sup>58</sup> by virtue of language, human beings not only produce their own world, like other animals, but they also produce an infinite number of possible worlds: this is

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<sup>54</sup> Lévinas 1982.

<sup>55</sup> Jakobson 1965.

<sup>56</sup> Kristeva 1969 [1981].

<sup>57</sup> Derrida 1967.

<sup>58</sup> Sebeok 1986.

the “play of musement”. The “play of musement” is fundamental in scientific research and all forms of investigation, in simulation, from lying to fiction, and in all forms of artistic creation. So “creativity” is proper to *language* understood as ‘writing’, as a ‘primary modeling device’ and a ‘derivative in verbal language’ (though mistakenly described by Chomsky as specific to the latter).

The formation itself of speech and of relative verbal systems, natural languages, presupposes *writing* such as we have defined it in this paper (in contrast to *transcription*). Without the capacity for writing, humankind would not be in a position to articulate sounds and identify a limited number of distinctive traits, *phonemes*, to reproduce phonetically, nor to arrange phonemes in different ways to form words (*monemes*), nor words syntactically to form an infinity of different *utterances* expressing different meanings and senses, nor to produce texts, those complex signs whose meaning is qualitatively superior and irreducible to the sum of its parts.

To recapitulate: writing is inherent in language-as-modeling, given that it confers different meanings to the same elements by repositioning them chronotopically. In other words, writing is inherent in language as a signifying procedure insofar as it is characterized by *syntactics*. The phonetic sign itself is writing. Language was already writing, even before the invention of writing as transcription.

*The a priori is not speech. The a priori is language and its writing mechanism.* The language of music articulates space-time thanks to language-as-modeling. Musical scores, like verbal language, are an expression of the human capacity for language, writing, articulation, ultimately for the properly human.

## Language and Communication

To maintain that communication is not the specific function of language can be confusing, as in Chomsky’s case. When Chomsky claims that communication is not specific to language, he is not referring to what Sebeok understands by *language* distinguishing it from *speech*, in spite of the fact that Sebeok cites him in support of his own position. But by *language* Chomsky understands ‘verbal language’, ‘speech’, and speech arises specifically for communication as Sebeok maintains.

Natural language is a (secondary) modeling system (whereas original language-as-modeling is a primary modeling system), and communication through natural language presupposes a particular modeling of the world. But Chomsky lacks the concept of modeling. On the contrary, *modeling* is present in the “theory of linguistic relativity” as formulated by Edward Sapir (1884–1939) and Benjamin Lee Whorf (1897–1941). However, given that it does not trace (secondary) modeling in natural languages (*langue/lingua*) back to language as (primary) modeling, the theory of linguistic relativity (like the Chomskyan approach) does not explain the multiplicity of natural languages which it presents as closed universes.

When explaining the specific grammars of natural languages, Chomsky proceeds from natural language (*langue/lingua*) to language (*langage/linguaggio*); he describes *language* as an innate “faculty” of speaking, rather than as a modeling

system, as a species-specific representation of the world, through verbal and non-verbal signs. He uses the term *grammar* to refer to verbal language, when instead *language* is a term which underlines the latter's characteristic capacity for modeling, verbal and nonverbal. Therefore, by *grammar* Chomsky understands a 'device that generates the sentences of different natural languages'. As such it is endowed with a phonological component, a syntactical component and a semantical component. But this grammar – unlike that of the natural languages – as described by Chomsky claims to be universal. In this sense, it resembles an *Ursprache*, an original verbal language (*langage/linguaggio*), a universal natural language (*langue/lingua*). The claim is that despite multiplicity and diversity all natural languages can be traced back to the innate structures of universal grammar. This is conceived in terms of "Cartesian" innatism, updated in biologicistic terms, moreover on the basis of opposition (now outdated) between rationalism and empiricism, as though philosophers such as Immanuel Kant (1724–1804), Ernst Cassirer (1874–1945) or Edmund Husserl (1859–1938) never existed.

Chomsky denies verbal language its communicative function. He isolates natural languages from their historical-social context (nor is it incidental that he should deny sociolinguistics the status of science). Furthermore, he considers them independently from nonverbal languages, as though interpretation were possible uniquely through verbal signs, through *renvoi* from one verbal interpretant to another (surface and deep structures).

Not making a distinction between *language* (as primary modeling) and *verbal language* (*natural language*) gives rise to forms of psychological reductionism as in the case of Philip Lieberman.<sup>59</sup> He attempts to explain the origin of language with concepts from Chomskyan linguistic theory. On this account, complex anthropogenetic processes are explained in terms of the linear development of given cognitive capacities. Moreover, all this is described in the language of traditional syntactics.<sup>60</sup>

As far as the communicative aspect of human languages is concerned, to describe *communication* simply as the 'exchange of information between emitters and receivers', as though they were preconstituted and external to the communication process, is reductive. "Communication" is a far vaster phenomenon than that described by semiology of Saussurean derivation. This is also true of communication as conceived by information theory. We must also add that this notion of communication as understood precisely by information theory found its most intelligent and perhaps most renowned formulation in an essay by Jakobson, "Linguistics and poetics", of 1960.<sup>61</sup> Here we trace the main concepts of communication semiotics taken from information theory: code, message, emitter, receiver, channel and context. Jakobson adds the important concept of function (Prague linguistic circle). "Communication" must be recognized in its effective historical-social consistency.

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<sup>59</sup>Lieberman 1975.

<sup>60</sup>Rossi-Landi 1985 [2006, p. 229].

<sup>61</sup>Jakobson 1960; subsequently Jakobson 1971.

Its development and functioning must be contextualized in the global sign network of human semiosis. Global semiosis is the condition of possibility for communication in the restricted sense, that is, the exchange of messages. Thus described, communication in the human world converges with *social reproduction*, of which communicative exchange, that is, the exchange of messages and goods, constitutes only one aspect. Identification of the object of communication-transmission, formation of “personal experiences” to communicate, coming to awareness, taking standpoints, interindividual relationships and intentional communication are all developed in the communication process thus understood.

Even needs, including “communicative needs” are formed in the communicative process. Needs, as demonstrated by Karl Marx (1818–1883) in his critique of “bourgeois” economy, develop as part of the process of social reproduction and are inconceivable outside communication. Consequently, to explain the origin of language *à la* Lamarck affirming, as does Friedrich Engels (1820–1895) in *Dialektik der Natur* (1883), that it arises when human beings have something to say to each other (“einander etwas zu sagen haben”<sup>62</sup>) is at the very least an oversimplification (on this aspect, cf. Rossi-Landi’s critique of Engels<sup>63</sup>).

Communication is the place where meanings, messages and experience, intentional acts including information transmission, are all formed. Reality, the way we perceive it, is organized and developed in the social processes of communication. As Rossi-Landi claims, from an evolutionary perspective verbal language does not emerge from an abstract need to communicate, but rather from specific communicative needs determined in the social. At the basis of communication, including in its primitive nonverbal forms, is the human species-specific modeling (and not communicative) procedure of language (in the sense described above as understood by Sebeok). Moreover, as Rossi-Landi claims, “language cannot be reduced to mere communication, otherwise the linguistic capacity could not be placed in a coherent phylogenetic framework of nervous structures and psychical functions”.<sup>64</sup>

At this point, it is clear that to establish that nonverbal languages precede verbal languages or vice versa is a mistake. Today’s nonverbal languages, insofar as they are languages, do not precede verbal languages. Instead, nonverbal sign behaviours do. As much as nonverbal sign behaviour can be traced in the animal kingdom at large, development in the human world is conditioned by the species-specific procedures of *language* understood as ‘primary modeling’. If such sign behaviours become “languages” and in turn (tertiary) modeling procedures, this is thanks to the mediation of natural languages (secondary modeling). As such, these sign behaviours are posterior to verbal language (speech), though they increase the interpretive and communicative possibilities of the latter.

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<sup>62</sup>Engels 1883 [1962].

<sup>63</sup>Rossi-Landi 1985 [2006, pp. 225–226].

<sup>64</sup>*Ibid.*, pp. 233–234.

## The Enigma of Babel

Chomsky's linguistic theory does not succeed in explaining the multiplicity of different languages. Moreover, this situation of multiplicity contradicts the uniqueness of the innate universal grammar hypothesis.

Plurilingualism does not only consist of different natural languages, but also of a multiplicity of different languages (*langage/linguaggio*) internally to the same natural language (*lingua*). Chomskyan linguistics neglects this type of multiplicity as well, given that it considers natural language (*lingua*) as a unique and unitary code. Chomsky's linguistics does not explain the plurality of natural languages nor the plurilingualism internal to each natural language. Though he insists on the "creative character of language", by *language*, as anticipated, he understands 'verbal language'. Furthermore, he remains anchored to the assumption that verbal language is endowed with a universal grammar, whatever the specific natural language and the specific grammar we are dealing with. This universal grammar has the same features and components (phonological, syntactic, semantic) of the specific grammars whose rules are reconducted to those of universal grammar. Given these premises, Chomskyan linguistics is not able to address the "enigma of Babel".

Plurilingualism does not only consist in the fact that verbal languages are multiple and cannot be reconducted to a single univocal and omnicomprehensive system that can supplant them all, or that functions as a model to study, understand, characterize them in theoretical terms. Plurilingualism is also given by the fact that all languages flourish in direct or indirect, implicit or explicit relationships with other languages acting as possible interpretants through which meaning is constituted, developed and transformed. Plurilingualism involves relations of translation, but also of derivation and mutual completion. Moreover, the multiplicity of different languages shares in the common language of a given culture, etc.

Natural languages form and develop through mutual relations of interaction and exchange; each one of them originates in the life of another natural language (*langue/lingua*), in its internal subdivisions and stratifications, in the internal dialectics of its languages (*langage/linguaggio*) and in the external dialectics of relations with other natural languages (*langue/lingua*), etc. The more complex a natural language becomes in terms of expressive capacity, terminological specification and specialization, of semantic-ideological extension, in terms of enhancement of its languages (*langage/linguaggio*) and discourse genres, the more it participates in the linguistic life of other verbal systems.

Work on internal and external plurilingualism in natural languages and on the relation between verbal and nonverbal signs is relatively recent. This is because linguistics has often underestimated, even ignored constitutive interlingualism among languages (*langage/linguaggio*) and discourse genres that go to form the different verbal sign systems – and linguistics has often played a leading role among language sciences.

Among those who have contributed most to underlining the importance of plurilingualism in the life of a natural language (*langue/lingua*) and of all cultural sign

systems generally, we wish to recall Bakhtin and Peirce. Bakhtin addressed the question of polylogism and plurilingualism at a time in political-cultural history when a mechanistic and monolingualistic view of the world prevailed, the Stalinist. Peirce has indirectly helped us understand the vital importance of internal and external plurilingualism for natural language (*langue/lingua*) with his theory of “the infinite deferral of interpretants”. Signs as such must necessarily relate to other signs that interpret them and determine their meaning at each occurrence in dynamical and open relations, of the endolingual and interlingual orders. In Italy, Giacomo Leopardi (1798–1837) was aware early-on of the essential nature of plurilingualism, at the time perhaps him alone, and not only in Italy, with respect to his time.<sup>65</sup> Leopardi thematizes plurilingualism, external and internal to the same natural language (*langue/lingua*), as a necessary, indeed constitutive factor of natural language. He returns to this issue on several occasions, though the question of plurilingualism is central to his reflections on language. Leopardi takes his distance from those philosophical-linguistic tendencies that, to echo Bakhtin,<sup>66</sup> only know two poles in linguistic life between which all linguistic phenomena are forcefully organized: the unitary system of a given language (*langue/lingua*) and individual use of this language by the speaker.

If plurilingualism is given naturally so to say – though it may be stronger or weaker depending on the historical-cultural situation –, this means that it is a feature of linguistic life that cannot be refrained, one we can actively intervene upon to favour transformation of plurilingualism into *dialogized pluridiscursivity*.<sup>67</sup>

*Dialogized pluridiscursivity* describes a situation that overcomes mere cohabitation among multiple languages (*langage/linguaggio*), and in certain cases among natural languages (*langue/lingue*), not only in the same culture and the same language (*langue/lingue*), but also within the same person, in the direction of a relation of communication, confrontation, and mutual interpretation. This is the condition of possibility for speech to be able to take its distances from a given language and achieve a metalinguistic and critical awareness of them.

Among common ideals wrongly indicated as favouring the quality of life, we find monolingualism and univocality (but this tendency can also be traced in those philosophical orientations that refer to logical-formal languages as the criterion to evaluate natural languages, that is, historical-social languages): a single language (*langue/lingua*), a single meaning for each signifier, and an unchanging verbal system devoid of internal languages that provoke semantic gaps from one language to another. This situation of monolingualism is expected to guarantee perfect communication, the exact expression of reality and of one’s own personal experiences. “New Speak” as hypothesized by George Orwell in his novel *1984* is a heavy satire of the myth of the “perfect language (*langue/lingua*)”.

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<sup>65</sup> Cf. Ponzio 2001.

<sup>66</sup> Bakhtin 1952–1953, pp. 67–75.

<sup>67</sup> *Ibid.*, p. 75 sq.

Currently there exist about six thousand natural languages, while we know of about eight thousand different languages, dead or living<sup>68</sup>; the difficulty in establishing the precise number<sup>69</sup> is linked, above all, with the possibility of distinguishing between languages (*langue/lingua*) and dialects. Just over a hundred or so of the total are languages accompanied by writing (transcription) systems.<sup>70</sup>

The biblical myth of the Tower of Babel describes the passage from an original situation of happy monolingualism to the “confusion of languages”, to “the chaos of plurilingualism”. According to this myth, the happy original world, a world that human beings slowly lost featured uniqueness and linguistic univocality.

All the same God punishes by raising the bet (what sort of a God would he be otherwise?). God humiliates by giving. Plurilingualism is a gift, even if often misunderstood. In the situation of Pentecost understanding the language (*langue/lingua*) of others consists in hearing it resound in one’s own language (*langue/lingua*). This means that encounter among different languages does not effectively occur. Each language only knows itself and remains closed and satisfied in its own identity. Instead, in the Babel of languages (*langue/lingua*) different languages effectively encounter each other and mutually experiment each other’s irreducible alterity. Nostalgia of “original monolingualism” can even be traced beyond myth and the popular imaginary in certain philosophical and linguistic conceptions. On their account, the multiplicity of languages (*langue/lingue*) can be traced back to a single original language, an *Ursprache*, universal linguistic structures subtending all languages (*langue/lingua*), so that divergences only concern surface structure. This describes Chomsky’s position. In reality, monolingualism, which is also monologism, is but one aspect of a totalitarian attitude towards pluralism and differences, made to pass as a necessary condition for living together.

Plurilingualism and polylogism – like plurivocality, ambiguity, vagueness –, rather than a punishment, a malediction, a fall from a condition of original happiness, are fundamental conditions, indeed irrevocable for communication, expression and understanding.

With reference to Chomsky’s linguistic theory, Dell Hymes in his essay “Speech and language”<sup>71</sup> observes that the more we insist on hypothetical universals and their relationship to a “faculty of language”, the more existing languages become mysterious. Why many languages and not one only? Differences are not eliminated and resemblances are far from being universals *à la* Chomsky. True language often begins where abstract universals finish.

To study verbal language (*langage/linguaggio*), as Chomsky does, in terms of biologicistic innatism, and to judge socio-cultural, historical forces in linguistic development as marginal, does not explain the fact that the supposedly universal biological structures of verbal language do not produce a single language, but many, nor that social conditioning and social differences produce the condition of internal plurilingualism.

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<sup>68</sup> Mauro 1994.

<sup>69</sup> Michel Malherbe counts three thousand (Malherbe 2010).

<sup>70</sup> *Ibid.*

<sup>71</sup> Hymes 1973.

An explanation is possible if we acknowledge that *language* understood as a ‘human species-specific modeling procedure’ distinct from *verbal language* is capable of producing multiple worlds and using the same “material”, as this term is understood by Louis Hjelmslev (1899–1965), to achieve multiple linguistic universes: in this case the great multiplicity of languages and expressions (on the phonological, syntactic, semantic and pragmatic levels) of “reality” depends on the propensity that language (*langage/linguaggio*) has for plurilinguism and polylogism, for the “play of musement”.

A clear sign of limits in Chomsky’s conception is the opposition between the *essential properties* of language (*langage/linguaggio*) which are determined biologically and expressed by a “universal grammar”, on the one hand, and “incidental facts” that distinguish among different languages (*langue/lingua*), on the other.<sup>72</sup> Monological reductivism is always connected to a monolingual vision. As observed by Jakobson, Chomsky’s followers most often only know but one language (*langue/lingua*), English, and from the English language they draw their examples.<sup>73</sup> What Chomskyan theory does not succeed in explaining is not only the existence of the multiplicity of natural languages (*langue/lingua*). The concept of innate grammatical structures also prevents an adequate understanding of the creative character of language. Under this latter aspect, George Steiner<sup>74</sup> agrees that critical readings of Chomsky’s approach have demonstrated that his “mentalism” is as naively deterministic as the behavioural theories of language, such as Skinner’s.<sup>75</sup>

Steiner advances the hypothesis that the proliferation of different languages (*langue/lingua*) derives from the fundamental need for “distancing” characteristic of language (*langage/linguaggio*), for developing the “otherness” dimension inherent in the “identity” of “lived individuality”. Human language (*langage/linguaggio*) is the process of signification that is forever renewing itself, in such a way that a language (*langue/lingua*) is never fixed, nor is it absolutely unitary: as it presents itself through a given language (*langue/lingua*) the world is never univocal and definitive; a given language develops points of view that are *other*, possibilities of saying the world that are *other* by comparison to another language (*langue/lingua*). Indeed, a given natural language is constituted and develops as a function of this possibility. In this sense, Steiner states that language (*langage/linguaggio*) is the main instrument through which man refuses the world as it is. He maintains that to move across languages (*langue/lingue*), to translate, even when we cannot move altogether freely, leads to discovering the human spirit’s almost disconcerting taste for freedom.<sup>76</sup>

We are on the way towards unraveling the enigma of Babel where such characteristics as ambiguity, semantic ductility, polysemy, hermetism, simulation, fiction, allusion, reticence, the implicit, otherness are all considered as essential aspects of verbal language, rather than as secondary, weak points, surface traits. Instead of

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<sup>72</sup> Chomsky 1975.

<sup>73</sup> Jakobson, quoted in *New Yorker*, 8 May 1971, pp. 79–80 (Steiner 1975, p. 245 sq.).

<sup>74</sup> Steiner 1975.

<sup>75</sup> *Ibid.*, p. 288.

<sup>76</sup> *Ibid.*, p. 473.

uttering *the same* reality, verbal language tends to take its distances from it by producing other meanings, other modalities of saying, by uttering *another* reality. Languages (*lingue/languages*) do not simply renew, as understood by generative-transformational grammars, they literally create.<sup>77</sup>

As Tullio De Mauro observes, “*variation* is not something that hits languages (*lingue*) from the outside: it installs itself in all points of the reality of a language (*lingua*) as a necessary consequence of its semantics and pragmatics, both of which, in turn, necessarily draw the characters of extensibility and flexibility from the functional needs of each language (*lingua*) in itself”.<sup>78</sup> This is what Leopardi had already maintained when he stated the need for internal and external plurilingualism, for semantic vagueness. He asserts that it is absolutely, materially impossible to impose a single language (*langue/lingua*), without giving rise to internal transformations and to other languages (*langue/lingua*), precisely as a way of spreading and imposing itself to a maximum degree.<sup>79</sup>

### **Language (*Langage/Linguaggio*) as Primary Modeling Species-Specific to Man and Natural Language (*Langue/Lingua*)**

Language (*langage/linguaggio*) as the capacity to construct multiple possible worlds finds form and expression through its materialization in a given language (*langue/lingua*).

The “play of musement”, no doubt founded on the capacity for language-as-modeling (*langage/linguaggio*), is enhanced by natural language (*langue/lingua*), the more it uses the instruments provided by the latter and fully exploits its resources and potential. On the other hand, languages (*langue/lingua*), themselves the historical result of this “play of musement”, are founded on the capacity for language (*langage/linguaggio*), each testifying to its capacity to construct multiple worlds.

But the capacity for language (*langage/linguaggio*) and the “play of musement” also find in a given language (*langue/lingua*), as it has been constructed historically, a limit on their possibilities. The restriction of language (*langage/linguaggio*) by a natural language (*langue/lingua*) can be superceded in the relation with another natural language. To know another natural language, in fact, *does not only serve to supercede barriers of a communicative order*, but also of the *cognitive, critical, ideological, inventive, emotional orders*, etc. Knowledge of one or more languages in addition to one’s own constitutes an obvious advantage in terms of deconstruction and reconstruction, given that such a capacity is not limited to or conditioned unilaterally by the mother-tongue (*lingua*).

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<sup>77</sup> *Ibid.*, p. 228.

<sup>78</sup> Mauro 1994, p. 80.

<sup>79</sup> Ponzio 2001.

Consciousness towards one's own natural language, which is favoured by the gaze of another language, promotes the possibility of experiences that do not converge with one's own language and that not only enrich speaker linguistic consciousness, but also the linguistic consciousness of the language itself. Already in its lexicon, every language (*langue/lingua*) contains instruments and materials with which it presents itself as a metalinguistic device capable of self-reflection, making of itself the object of reflection. One language (*langue/lingua*) empowers the linguistic consciousness of another language, providing not only instruments and materials that enhance and refine its self-awareness, but also an external point of view beginning from which it can improve the way it sees, describes and evaluates itself.

The relation between a language (*langue/lingua*) and experience of one's own body by the speaker of that language deserves attention in itself. Here, we can only address the issue briefly. Learning a mother tongue involves losing many sounds and with them the relative capacity to produce those sounds which, instead, the child who is only beginning to learn how to speak possesses, as testified by infant lallation. To learn a foreign language means to recover (at least in part, relatively to a given language [*langue/lingua*]) the phonatory capacity and sounds debarred by the mother tongue. To articulate the phonemes of another natural language the learner must reactivate physiological capacities that have atrophied because they were not foreseen by the first language, but which could have developed in a different linguistic community.

The implication is that knowledge of natural languages different from one's own offers the possibility of recovering capacities long-abandoned, therefore of renewing the relationship between word and body, speaker and one's own body. This last aspect should not be underestimated when it is a question of motivating foreign language learning. In fact, the search for new experiences, the desire to perceive new sensations, to experiment the body and savour the exotic are certainly more attractive than the drudgery of training to use a given means to satisfy given ends, in this case, the need to communicate which is the motivation generally proposed to promote the study of foreign languages.

The proliferation of natural languages and the concept of linguistic creativity (Chomsky) both testify to the "capacity of language", understood as a 'primary modeling device capable of producing an indeterminate number of possible worlds'. Both derive from the human modeling capacity to invent multiple worlds, that is, from the propensity for the "play of musement".

Modeling works on what Hjelmslev calls "purport",<sup>80</sup> an amorphous *continuum* both on the acoustic level and the semantic. Every natural language gives a particular form to this purport, like sand, as Hjelmslev says, which takes the shape of its container. Every natural language (*langue/lingua*) articulates the indistinct material of expression and content in different ways. This is what Sebeok calls secondary modeling. The phonic material of the *continuum*-purport is organized into "distinctive features", known as phonemes, in the different natural languages (*langue/lingua*),

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<sup>80</sup>Hjelmslev 1943 [1961, pp. 32–33].

just as the continuum of the colours of the solar spectrum is divided differently, for example, in English and Welsh.<sup>81</sup> All this can be explained on the basis of creativity as it characterizes *language* understood as a ‘human species-specific modeling procedure’ (primary modeling).

To use Rossi-Landi’s terminology, “linguistic work” produces different paradigms that correspond to the different worlds of different natural languages. The same thing occurs with articulation and organization of the social continuum in different cultures, for example, in the systems of family relations analyzed by Lévi-Strauss.<sup>82</sup>

Human language-as-modeling, writing, produces interpreted signs and interpretant signs on purport as understood by Hjelmslev, on the levels of content and expression. Purport in Hjelmslev’s sense is similar to Hamlet’s cloud (Shakespeare): it changes aspect from one moment to the next. Signs shape purport differently in different natural languages, each tracing their own specific subdivisions upon it. Purport is physical, acoustic, for what concerns the form of expression, but it is also the amorphous “mass of thought”, for what concerns the form of content. Thanks to linguistic work as deposited in different historical-languages, the same material can be formed or restructured differently in different languages like sand put into different shapes or clouds taking different forms, as Hjelmslev claims.

Purport is always other with respect to a given configuration. All the same, however, it always gives itself as *signified*; it *obeys* a form and presents itself as *substance*.

## Language (*Langage/Linguaggio*) and Cognitive Processes

Chomsky limits linguistic creativity to verbal language, moreover separating the latter from its communicative function. Instead, creativity is proper to *language* understood as a ‘human species-specific modeling device’. Creativity in verbal language and the capacity to be freed of the communicative function is determined by the fact that verbal language is grounded in language-as-modeling, which has no limits on the capacity for innovation and inventiveness. Similarly, that writing can get free of its (mnemotechnic) function (which consists in transcribing verbal oral language) and present itself as creative writing is possible for the same reason.

Reflection on language and speech throws light on what it means to be “*sapiens*”, or rather “*sapiens sapiens*”, an expression used to characterize mankind in the most advanced phase of development. While the human being shares in semiosis like all other living beings, it is the only animal capable of “semiotics”, that is, of contemplating semiosis. *Semiotics* thus understood alludes to the universal propensity of the human mind, as Sebeok claims, for reverie focused on its long-term cognitive strategies and daily maneuverings.<sup>83</sup>

<sup>81</sup> Cf. Johansen 1998, pp. 2275–2282.

<sup>82</sup> Cf. Lévi-Strauss 1958; Ponzio et al. 1994 [1999, pp. 50–53].

<sup>83</sup> Sebeok 1991, p. 97.

Verbal language plays a fundamental role in all this. It provides the form through which consciousness and thought exist and take shape, but it is not the origin.<sup>84</sup> We have already commented on the relation between verbal language and language-as-modeling. As the possibility of constructing different worlds, language-as-modeling is enhanced by verbal language, by other auxiliary artificial stimuli or “stimuli-means” [*stimul-sredstvo*] – different number and calculation systems, different mnemotechnic devices, different writing systems, schemes, diagrams,<sup>85</sup> and by the manipulative, productive activity of artifacts (like the former string these are specified historically and socially and as such relate to them dialectically).

At the same time, however, language as pre-verbal modeling subtends the manipulative activity of verbal and nonverbal languages.<sup>86</sup> The production of artifacts and transformation of material objects into signs proceed at the same pace (on the phylogenetical level as well, that is, in the process of homination). And while they presuppose language as primary modeling, the central element of such transformation is the human body.

The human body is the primary material of manipulative material and sign material: this involves the primacy of gesture and voice, even before the latter becomes an articulate phonic language. Moreover, the instruments used for work represent an extension on the human body [*Leib*]. With respect to one’s own body, external material reality, both in its sign function and in its instrumental function, can be considered as secondary material that presupposes reference to the human body.<sup>87</sup>

The relation between semiosis and thought also emerges as the connection between *meaning* and *concept*. In any case, meaning is distinguished from concept. The interpretive itinerary that goes to form meaning converges in part with the *class* that forms the concept. For example, interpreted-interpretants, that is, meaning in the botanical sense for the phonia “tree” only enter a part of the class that forms the concept *tree* (understood in the same sense). In fact, if, in this interpretive itinerary, we have interpretants that are trees (the olive tree is an interpretant of the sign “tree”), we also have interpreted-interpretants that are not trees, beginning from the same phonia itself “tree”, which expresses the concept *tree* through its meaning, but is not a tree and therefore does *not belong* to the logical class *tree*. Knocking at the door is generally interpreted as “someone is behind the door and wants to enter”. The two things, like the interpretant formed by the action of opening the door, are on the same interpretive route, but they do not enter the same logical class and do not form a concept. Smoke signifies fire, that is, it has fire as an interpretant – just like the word *fire* – but *smoke* and *fire* do not enter the same concept.

Therefore, meaning and concept are closely connected. Every meaning expresses a concept and, vice versa, every concept requires a meaning, that is, an interpretive route. All the same, however, meaning and concept must be kept distinct. *The concept is a class of objects which may or may not be grouped together in subclasses, and the*

<sup>84</sup>Rossi-Landi 1985 [2006, p. 252].

<sup>85</sup>Vygotskij 1934 [1990].

<sup>86</sup>Cf. Rossi-Landi 1985 [2006, pp. 217–269].

<sup>87</sup>Voloshinov’s essays of 1926–1930 cf. in Ponzio (ed.), 2014, pp. 271–333, 1461–2069.

*class may eventually enter a larger class.* Meaning is an interpretive route formed of connections among signs, of deferrals from interpretant to interpretant. The meaning ‘tree’ and the concept *tree* are two different things even if one implies the other.

## Utterance and Answering Comprehension

Until it deals exclusively with the elements of natural language and the sentence, linguistics cannot account for answering comprehension. Instead, answering comprehension (or if we prefer, responsive understanding) is connected with the utterance, intertextuality and dialogue. The objects of linguistics are limited to interpretation in terms of identification, that is, interpretation understood in terms of identification rather than of answering comprehension. Consequently, in linguistics *quietude* is the condition for interpretation-identification. Quietude is the condition for perceiving sounds and identifying verbal signs. Following Bakhtin in “From notes made in 1970–71”,<sup>88</sup> a distinction can be made between *quietude* and *silence*, which corresponds to the distinction between the conditions for *perceiving a sound*, the conditions for *identifying a sign* and the conditions for *responding to the sense of a sign*. Quietude is associated to the first two cases, silence to the third, i.e. to the conditions for responding to the sign and understanding sense. Quietude is the condition for perceiving sound and the distinguishing features of language; for identifying the repeatable elements of language, those belonging to the system of language on the phonological, syntactical and semantical levels. Instead, silence is the condition for understanding the sense of the utterance, sense in its unrepeatability; silence is the condition for response to the utterance in its singularity. Quietude is associated with *language* understood as ‘*langue*’ and with its physical (acoustic and physiological) substratum. Silence is associated with the utterance and with sense, with the social-historical materiality of the sign. Whilst quietude is an expression of the logic of identity, silence is associated with high degrees of alterity and as such is an expression of the properly human.<sup>89</sup> It ensues that silence can reach high degrees of critique and creativity. In terms of interpretive capacity it is associated with *responsive understanding* and *responsible engagement*. According to this analysis quietude is associated with signality and silence with semioticity.<sup>90</sup>

Both taxonomical linguistics and transformational generative linguistics – which shifts its attention from the elements of natural language and the sentence to the relations that generate them – belong to the same orientation. We are alluding here to the tendency to neglect the relation of answering comprehension (or responsive understanding) among utterances, their sense. Unlike *meaning* understood in terms of identification, answering comprehension, *signifying processes* that develop in terms of sense and significance require *silence* as the condition of their production. Nor does silence represent a limit on sense and significance.

<sup>88</sup> Bakhtin 1970–1971 [1986].

<sup>89</sup> Ponzio 1993, pp. 138–154; Petrilli 2014, pp. xx, 112–114.

<sup>90</sup> Bakhtin 1970–1971 [1986, pp. 133–134]; Petrilli 2014, Chapter 6.

It ensues that neither taxonomical linguistics nor generative linguistics have anything interesting to say about the utterance as the live cell of discourse, about its dialogical character, its essential vocation for answering comprehension. Nor do they have anything to say about the different forms of silence, about the indirect, deferred, allusive, parodic, ironical utterance, about its ambiguity and polysemy, its implied sense, implicit meaning, potential for disengagement, capacity for “shift”.<sup>91</sup> Neither taxonomical linguistics nor generative linguistics have anything to say about literary writing which is made of different forms of silence.<sup>92</sup> In his 1959–1961 essay, “The problem of the text”, Bakhtin says that the “writer” does not use language (*lingua*) directly, but “has the gift of indirect speaking”.<sup>93</sup>

Insofar as it is based on the notion of the system of rules, on the code, insofar as it can only move in the space that extends from sound to the verbal sign identified in phonological, syntactical and semantical terms, that is, the space of quietude, this type of linguistics, code linguistics, can also be named “linguistics of quietude”.

Encounter, mutual methodological and terminological exchange between linguistics of the sentence, on the one hand, and mathematical information theory, on the other, is not incidental. The denomination itself of *code linguistics* derives from this exchange. As for information theory, this type of linguistics, code linguistics, is only familiar with noise as an obstacle to interpretation, that is, to interpretation reduced to de-codification, recognition and identification. Once the utterance is reduced to the relation between code and message, proper to the signal, noise is connected to some imperfection in the channel, to interference from the external context, or to lack of rules that restrict the relation between message and code and consequently allow for ambiguity. In any case, noise thus described is connected with quietude, the condition for perception of the signal.

The problem of sense and significance goes beyond the limits of code linguistics or “linguistics of quietude”. It concerns linguistic reflection that is not limited to *historical natural language (langue/lingua)* understood in terms of code, to linguistic relations among elements in the system of language (*langue/lingua*), to relations among sentences, or to transformational processes (from “deep structures” to “surface structures”). Rather, the question of sense and significance concerns dialogical relations among verbal signs insofar as they are utterances, on the one hand, and interpretants of answering comprehension, on the other.

The background from which dialogical relations emerge is silence. Quietude and the absence of noise constitute the physical condition for the utterance, the minimal condition that concerns it in the signality dimension, that of recognition and identification, but they will not suffice for the utterance to subsist as a sign and have sense.

Silence is both the situation or position the utterance begins from and the situation or position it is received in. The condition of possibility of the word’s freedom is silence, a choice made by the speaker, a position chosen by the speaker; freedom

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<sup>91</sup> Barthes 1982.

<sup>92</sup> Ponzio 2010 and 2012a.

<sup>93</sup> Bakhtin 1959–1961 [1986, pp. 110–115].

involves the violation of silence and not simply violation of quietude; at the same time, it presupposes silence as a *listening position*.

From silence, the utterance's freely chosen starting point, to the silence it calls for, to which it turns, to which it gives itself and which receiving silence welcomes in listening: this is the movement of the utterance. Between emitter silence and receiver silence there is no substantial difference: silence as the utterance's starting point is in turn a listening position; the utterance is effectively a response, an answering comprehension response. Vice versa, silence as a listening position is the starting point for interpretation of the answering comprehension order, the beginning of a response in the form of an utterance when the responsive interpretant is of the verbal type. The utterance turns to the silence of responsive listening. Once the silence of responsive listening is eliminated, what remains is quietude. Obviously the utterance does not address quietude, on the contrary it withdraws from it. Quietude as we are describing it here belongs to the system of *language (langue/ lingua)* understood as 'repetition', 'iteration', as reproduction of the "order of discourse" (Michel Foucault<sup>94</sup>). Instead, silence belongs to the sphere of the non repeatable utterance; it participates in the open unfinalized totality of the logosphere, as Bakhtin says in his 1970–1971 notes quoted above.<sup>95</sup>

Silence allows the utterance to withdraw from investigative, coercive quietude, quietude of the linguistic system. Roland Barthes (1915–1980) speaks of the "fascist" character of the system of language.<sup>96</sup> This does not consist in stopping a person from speaking, but in obliging that person to speak, to reiterate fixed meanings, sanctioned by the order of discourse. Quietude imposes speaking, but not listening. Silence is listening. Insofar as it is responsive listening, silence is a pause in the unrepeatable utterance.

The "linguistics of quietude" corresponds to a communication system dominated by quietude. Code linguistics is the expression of the centripetal forces of the social. Monologism, the tendency towards univocality and the lowering of the sign to the level of signality, as established by the equal exchange relation between signifier and signified, only belongs to the linguistics of quietude secondarily: in the first place, they belong to the social form that has chosen quietude as the background for speaking. The linguistics of quietude is simply an expression of this state of affairs.

Homologation of the communicative universe reduces listening to wanting to hear. It limits the spaces of silence where freedom to listen is as necessary as freedom of the word. Consequently, due to such homologation processes the communicative universe ends by investing the verbal sign solely with the conventional characteristics of the signal or the natural characteristics of sound.

From necessity of the natural to repetition of the conventional, or to say it with Peirce, from indexicality to symbolicity: this is the sphere reserved to the sign when it loses its ambivalence, ductility, and possibility of attracting an interpretant characterized by originality, autonomy, absolute alterity. Peirce attributes such characteristics to *iconicity*.

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<sup>94</sup> Foucault 1971.

<sup>95</sup> Bakhtin 1970–1971.

<sup>96</sup> Barthes 1979.

Enclosed in the universe of quietude and the obligation to speak according to laws, conventions, habits, the sign loses its character as a challenge, a provocation with respect to identity, the closed totality; it loses the possibility of questioning that which seems firm and definite, as though it were natural. Instead, such an attitude is possible through silence, which means not to collaborate with the closed universe of discourse, to withdraw from monologism, to supercede the logic of equal exchange between *signifiant* (signifier) and *signifié* (signified), between the interpreted sign and the interpretant sign.

Constriction of the sign to the space of quietude, separation from silence and the freedom of listening (listening open to polysemy) deprives the sign of its species-specific *human* character, of its capacity for *language* (understood in Sebeok's sense as 'modeling', 'syntactics'). Quietude renders the sign mechanical and natural, making it oscillate between the conventional character of the signal and the natural character of sound, the natural character of that which does not make claims to sense.

A linguistic theory capable of accounting for the universe of language, expression and communication must be explicative and critical, well beyond the limits of a descriptive and taxonomic approach to language analysis. A global approach to communication in the human world must account for the social processes of linguistic production in relation to a critical theory of ideology. What we are describing here as the "linguistics of silence"<sup>97</sup> is turned to the live word, to the utterance as it develops out of the dialogic interaction among interpreted signs and interpretant signs, among voices in the real context of social relations. The linguistics of silence is oriented as listening, therefore it focuses on language oriented in the direction of dialogic heteroglossia, plurilingualism internal and external to the same natural language and answering comprehension, which also account for the human capacity for critique and creativity.

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<sup>97</sup>Cf. Petrilli (ed.), 2007 and 2013.

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