

Susan Petrilli*

Semiotics and education, semioethic perspectives

DOI 10.1515/sem-2016-0078

Abstract: “Semioethics” is a neologism coined in the early 1980s to highlight the relation between signs and values, identity and otherness. It keeps account of Victoria Welby’s concept of “significs” and of Sebeok’s “global semiotics” with its critique of glottocentric and anthropocentric tendencies. Together both sources, significs and global semiotics, provide the context for contributions from semioethics to education. Semioethics recovers the ancient vocation of semiotics, originally “semeiotics,” for life and its wellbeing. It elicits the importance of applying an interdisciplinary approach and a “detotalizing method” in education by contrast to the totalizing approaches of grand narratives. The human being is endowed with a “primary modeling device,” also called “language,” and with it “syntactics.” Semioethics considers the role of these special characteristics that specify the human being as a human being, a “semiotic animal,” and addresses the human propensity for creativity, critique, and responsibility for health over the globe, both in terms of physical-organic materiality, the body, and of semiotic materiality, signs and values. These characteristics can be developed and enhanced through a specifically “linguistic education” with a particular emphasis on otherness, dialogue, and listening. Practicing semioethics becomes more pressing in the face of the relational dynamics between the historical-social and biological spheres, between culture and nature, between semiosphere and biosphere, and between semiotics, bio-semiotics, and education.

Keywords: education, interlingualism, global semiotics, modeling, responsibility, semioethics

The name that no human research can discover
But the cat himself knows, and will never confess.
When you notice a cat in profound meditation,
The reason, I tell you, is always the same:

*Corresponding author: Susan Petrilli, Department of Lettere, Lingue, Arti, Italianistica e Culture Compare, University of Bari Aldo Moro, Via Garruba 6, Bari, Puglia 70122, Italy, E-mail: susan.petrilli@gmail.com

“Semioethics” is not a discipline in its own right, but an orientation and opening in semiotics that calls to be cultivated now more than ever before, a necessary bend in semiotics considering the conditions our globalized world has come to find itself in. To recover the ancient vocation of semiotics understood as “semeiotics” means to focus on a specific type of sign, namely, the symptom. With reference to physical-organic life, symptoms are those signs that afford information about health conditions, for what concerns us here the health of semiosis, therefore life, if we accept the axiom posited by Thomas A. Sebeok (1986) that semiosis and life converge.

In a theoretical framework that keeps account of the interconnection between nature and culture, semioethics today continuing on from semeiotics investigates the symptoms of disease in the social and moral spheres, which are the spheres of specifically socio-cultural materiality, semiotic materiality (see Petrilli 2010: 137–159; Rossi-Landi 1992).

Semeiotics or symptomatology, as conceived and practiced in the ancient Greek tradition with Hippocrates (c. 460–377 B.C.) and Galenus (c. 129–200) after him, is identified by Sebeok as a possible origin of semiotics as it is theorized and practiced in the present day and age. In fact the ethical instance of sign studies is already made explicit in the *Hippocratic Oath* that physicians historically are called to undersign. Its ethical norms prescribe medical treatment for citizens and foreigners alike, including free assistance for those who are unable to pay. Love for one’s own craft, in this case medicine, cannot be separated from love for the other. Following Hippocrates, Galenus also stated that (medical) science and ethics are inseparable. In dialogue firstly with such contemporary philosophers as Mikhail Bakhtin and Emmanuel Levinas (in addition to other scholars and research fields mentioned in this essay), semioethics today further promotes such precepts as established by one of its most ancient branches as is semeiotics.

So to relate semiotics to ancient medical semeiotics means to remember its ancient vocation for life and wellbeing. Nor does “life” here solely apply to human life. Rather, it extends to all life-forms over the globe. In fact, the aim of semioethics is also of the ecological order. This is in line with the connection between studies on signs and values and “biosemiotics,” also keeping account of recent developments of the latter in the direction of “ecosemiotics,” a term first introduced by Winfried Nöth (1991) in 1996, and further elucidated in writings by Jesper Hoffmeyer (1996a, 1996b) and Kalevi Kull (1998a, 1998b): other expressions for “ecosemiotics” include “ecological semiotics” or “semiotic ecology.” In his *Routledge Companion to Semiotics*, Paul Cobley defines “ecosemiotics” as:

The study of the interface of humans and their natural environment. It comprises the study of *communication* between humans and nature at large as well as the *meaning* of the human ecosystem for humans. It also includes, in a broader sense, the relation of humans with other humans – although this is to be pursued through the perspective of *biosemiotics*, particularly the theory of *Umwelt* (as opposed to mainstream anthropology, sociology and so forth). (Cobley 2010: 212)

This is an important aspect of sign studies that educational practice oriented in the direction of semioethics should address in line with what in education studies is now commonly known as “ecological literacy” (see Capra 1995; Orr 1992; Semetsky 2010).

On the future of the whole planet’s wellbeing depends the future of that special inhabitant that is the human animal, what we have also denominated the “semiotic animal” (Deely et al. 2005). But we also know that humankind has anthropized the planet and put life at risk. So that paying attention to semioethics becomes ever more pressing in the face of growing interference in communication, at a planetary level, between the historical-social and biological sphere, between culture and nature, between the semiosphere (Lotman 1990) and the biosphere (Vernadsky 1926).

2 Significs, a prefiguration of semioethics

“Semioethics” works on the relation between sign, value, and behavior and is prefigured by “significs,” a neologism coined by Victoria Welby in the early 1890s for her theory of meaning and interpretation (Welby 1983 [1903], 1985 [1911]; Petrilli 2009). Significs focuses on the sign’s ultimate value and significance beyond strictly semantic meaning. It keeps account of the everyday expression “What does it signify?” In contrast to such denominations as “semantics,” “semasiology,” “semiotics,” the term “significs” was free from any technical associations. Consequently, it was suitable to signal the axiological implications in the relation between sign and meaning, in the connection between sign and value under all aspects – pragmatic, social, ethic, aesthetic, etc. (see Welby’s exchanges with Vailati in Petrilli 2009: 407–419; with Peirce in Hardwick 1977; see also Petrilli 2009: 288–294).

Central to significs is Welby’s triadic model for the analysis of meaning, in particular the distinction between “sense,” “meaning,” and “significance” (see Petrilli 2009 [1893, 1896]: 421–449; Welby 1983 [1903]: 5–6). From her encyclopedia entry, “Significs”: “Sense” is understood as “the organic response to environment” and “essentially expressive element in all experience”; “Meaning” is

purposive, it indicates the specific sense which a word “is *intended to convey*”; “Significance” includes sense and meaning and refers to “the far-reaching consequence, implication, ultimate result or outcome of some event or experience” (Welby in Petrilli 2009: 346). Charles S. Peirce associates Welby’s triad of sense, meaning, and significance to his own triadic distinction between “Immediate Interpretant,” “Dynamical Interpretant,” and “Final Interpretant” (Hardwick 1977: 109–110).

In her book of 1911, *Significs and Language*, Welby defines significs as “the study of the nature of significance in all its forms and relations” (1985 [1911]: vii), with a practical bearing “not only on language but on every possible form of human expression in action, invention, and creation” (p. ix). In her 1903 book, *What Is Meaning?*, she explains that as a “philosophy of Significance” significs involves the “philosophy of Interpretation, of Translation, and thereby of a mode of synthesis accepted and worked with by science and philosophy alike” (1983 [1903]: 161).

Significs promotes a “significal method” that transcends descriptivism – the tendency to simply describe the use of verbal language or other social sign systems without keeping account of the axiological component present in them, of the relation between signs and values, signs and ideologies, signs and behavioral programs (which are mostly assumed passively). Instead, significs makes no claim to neutrality. It keeps account of the fact that verbal and nonverbal signs in the human world are pervaded with values, both when communicating and responding, arguing and replicating. This means to say that human signs can never be neutral whether they belong to ordinary life or to different languages in the scientific sphere that interpret life, study and analyze it, or that depict it as in verbal artistic genres.

As a method, Welby’s significs studies the conditions that make meaningful behavior possible: “‘a method of mental training’ which concentrates intellectual activities on ‘meaning,’ the main value and condition for all forms of study and knowledge” (Welby 1983 [1903]: 83); “a method of observation, a mode of experiment” which “includes the inductive and deductive methods in one process” (1983 [1903]: 161). This combination can be associated to what the Italian mathematician and philosopher Giovanni Vailati (one of Welby’s admirers and correspondents) designated as the “hypothetical-deductive method” (see Vailati 1987), and Peirce as the “abductive method” (see Bonfantini 1987; Merrell and Queiroz 2005; Petrilli 2005, [ed.] 2015: 167–175; 2009: 407–419).

Insofar as its scope is universal, “significs” designates a *transdisciplinary* approach and not a “supplanting system.” Welby points out that the principle

involved in signifiacs “forms a natural self-acting Critique of every system in turn, including the common-sense ideal” (1983 [1903]: 162), therefore it is also *metadisciplinary*.

Welby’s signifiacs is the expression of “co-operating minds” in a community context (see Nuessel et al. 2013). She worked on her ideas in dialogue with many other personalities from different research areas, academic disciplines, professions, walks of life, etc. She was at the center of an international network of epistolary relations with over 450 correspondents including, in addition to the already mentioned Peirce and Vailati, such names as Bertrand Russell, Thomas Huxley, Max Müller, George Wells, Henry James, Henri Bergson, Michel Bréal, André Lalande, Henri Poincaré, Ferdinand Tönnies, Rudolph Carnap, and many more. Accordingly, Welby liked to think of her signifiacs as the expression of a community effort (Petrilli 2015a). The notion of community, more particularly the “community of inquirers” also plays a central role in Peirce and his own vision of progress in science (*CP* 5.358–5.387).

Charles K. Ogden is another among many important figures who were influenced by Welby, to the extent that she considered him as a possible continuator of signifiacs (Petrilli 2009: 731–747). He mentions signifiacs in his 1923 book with Ivor Richards, *The Meaning of Meaning*, and signals her correspondence with Peirce (Hardwick 1977; Ogden and Richards 1923). Through Frederik van Eeden’s mediation, signifiacs as conceived by Welby gave rise to the Signific Movement in the Netherlands in the first half of the twentieth century (in addition to Welby’s writings, Petrilli 2009 includes an anthology of writings by first generation “significians”).

Besides Welby’s conceptualization of signifying and understanding and special focus on such notions as “sense,” “signification,” and “significance,” “interpretation,” and “translation,” semioethics draws on Peirce’s work in ethics (Petrilli 2014a: 65–93), on the thematization of the connection between signs and values, signification and significance, semiotics and axiology by Charles Morris (1964, 1971), and on the philosophical writings by Emmanuel Levinas (1961) and Mikhail Bakhtin (see Ponzio 2014). So, by contrast with a strictly gnoseological, descriptive, and ideologically neutral approach as it largely characterizes sign studies (particularly linguistics, semiotics and philosophy of language) across the twentieth century, semioethics recovers the axiological dimension of human semiosis.

From the point of view of education, the semioethic approach underlines the need to focus on meaning in relation to values, and on meaning and value in relation to language and communication generally, verbal and nonverbal (see Petrilli 2015b). And while working on questions of method, semioethics points to the importance of highlighting the human capacity for creativity, critique, and responsibility from early stages in educational programs.

3 A “significant education” for the development of “critical linguistic consciousness”

Welby in the nineteenth century had already clearly focused on the question of linguistic education and its importance, and did so in dialogue, among others, with Giovanni Vailati who took an interest in her significs and through Welby discovered Peirce introducing him and his pragmatism to Italy. Both Welby and Vailati call the reader’s attention to such problematics as the role of *ambiguity* in expression – distinguishing between ambiguity in the negative sense, that which generates confusion and misunderstanding, on the one hand, and ambiguity in the positive sense, that which generates enhanced meaning and understanding, on the other; to the related problem of linguistic anarchy; and to the bad use of logic as it results from the bad use of language. So-called “linguistic traps” impede the free development of language and logic. Their removal is considered as a necessary condition for progress in knowledge and experience, for the full development of expressive potential and of the capacity for creative interaction with the “Other” understood in a broad sense, inclusive of the environment, whether “natural” or “cultural.” Consequently, both Welby and Vailati (who after giving up his position at the University of Turin earned his living as a teacher of mathematics in the Italian secondary school system) emphasize the crucial importance of focusing on the state of the expressive instruments at our disposal, on linguistic usage, therefore on so-called “verbal questions.” Together, they promote the need for the “critique of language” and a “significant education” at both the theoretical and practical level (see Petrilli 2009: 379–384).

Turning her attention specifically to the question of education, Welby maintained that successful teaching and learning procedures are largely founded on relations of association and comparison among different experiences and perceptions, on relations of similarity and analogy:

We strangely ignore the fact that comparison is our one way of acquiring or imparting knowledge; that no perception has its full “sense,” much less meaning, until we have started from its likeness to or correspondence with some other perception already ours; as we have seen, we forget that we cannot say one word to our fellow without assuming the analogy between his “mind” and our own. (Welby 1983[1903]: 43)

She discusses figurative language, observing how analogy and metaphor characterize everyday language, common speech, even though the speaker’s use of such expedients is usually involuntary, unconscious, implicit, and indirect. Precisely because of this, she believed that such expedients should be the object

of systematic studies in the sphere of education theory. She also maintained that their communicative effectiveness for the interlocutor should be experimented and verified at a practical level. To make such logical-linguistic mechanisms emerge at the level of conscious life is to take a step towards dealing with inferential and interpretive inadequacies, with communicative deficiencies at large.

When in 1903 Welby sent her book *What Is Meaning?* to Vailati, the latter, in a letter dated 18 March 1903, replied with a list of all the points he agreed with completely:

- 1) Your insisting on the need for a critique of imagery, for a testing of analogies and metaphors (especially when “unconsciously” or “semi-unconsciously” used, as it is always the case in the current and vulgar ones).
- 2) Your warning against the tendency of pedantry and school-learning to discourage the development of linguistic resources, by the inhibition of those spontaneous variations that are the necessary condition of organic growth.
- 3) Your valuation of the practical and speculative importance of raising language from the irrational and instinctive to the rational and volitional plane; in which it is considered as a means or a contrivance for the performance of determined functions (representative, inferential, communicational, etc. and for the attainment of given ends). (Vailati 1971: 143)

Welby also discussed pedagogical issues with Charles Ogden who at the time was a young university student interested in signifiacs and its promotion. As emerges from their correspondence which took place between 1910–1911, at the time Ogden had already read Welby’s 1903 book, *What Is Meaning?*, was looking for specific literature on signifiacs and any recent developments, and had heard about George F. Stout’s plans to edit a volume entitled *Essays on Signifiacs*. (This book was never published, though the project was somehow brought to a conclusion in 1990, by initiative of H. Walter Schmitz [see Schmitz 1990]). Welby was giving the finishing touches to her 1911 book *Signifiacs and Language* (Welby 1985 [1911]). As she explained to Ogden in a letter dated 15 December 1910, she had been working on signifiacs for more than forty years, thirty of which were spent in almost total obscurity: “*I have been ignored for 30 years. That’s all right: but Signifiacs has been ignored too and a whole generation has grown up carefully fettered, blinkered, and paralyzed who might.... But I won’t rave*” (in Petrilli 2009: 769).

In a letter dated 15 November 1910, Ogden had already informed Welby about a paper he intended to present at a public meeting on the subject of

significs, emphasizing his special interest in “the more strictly linguistic side” of significant questions, to the end of fighting confusion through the adequate development of a “linguistic conscience” (appropriating an expression introduced by Welby): “I should be able to draw attention to the confusion produced in the discussions we have (at least once a week) by the lack of the ‘*linguistic conscience*’ you speak of, and the unwillingness to attempt its acquisition” (in Petrilli 2009: 767). He soon presented a paper on “The Progress of Significs” at Balliol College, Oxford University, and another at a gathering with the Heretic Society at the University of Cambridge (now in Ogden 1994). As he informed Welby in a letter dated 13 December 1910, he developed his topic according to the following plan which reveals his efforts to situate significs in a context broader than that delineated by herself even:

1. Introduction – importance of subject in general – objects, etc.
2. Historical survey – Protagoras – Locke – Tooke – Welby – Sidgwick, etc.
3. Future publication – Stout – Welby – Encyclopedia, etc.
4. General consideration of causes of backwardness (*Religion*, etc.).
5. Causes of confusion in *DISCUSSION* – Education – Metaphor – Definition – Rules for treatment of words *pro tem*, etc.
6. Suggested Remedies – (1) Education of “Significian”; (2) Universal Language, etc.
7. Summary (Ogden in Petrilli 2009: 768)

Welby made constant appeals for the development of a “linguistic conscience” through a “significant education.” As she wrote in a letter to Ogden dated 23 November 1910:

In advocating Significs as giving in education and in all the needs of mental life the key to all difficulty, I am but exploiting to the full the resources which have year by year afforded a richer witness at once of our vital lack and need and of its commanding supply. The significant is the converse of the pedantic: it serves and provides the creative and logical powers with unrealised data and material. Experience and fact are as it were signalling and signaling to us – too often in vain. (Welby in Petrilli 2009: 767–768)

Not dogmatism, therefore, nor unquestioning faith in received truths, but unprejudiced open-mindedness, development of the creative and logical powers: this is what Welby advocated for the sake of progress in all walks of life, ultimately for the sake of improving the quality of life and human relationships overall. To this end she promoted reform in the principles that guide teaching methodology, which represented just one aspect of her plans for general reform in education.

Education was part of the broader scheme for social reform at large. A “linguistic conscience” goes together with a “social conscience,” both to be

developed on the basis of “critical linguistic consciousness” (Petrilli 2016: 118–125). Welby believed that the signifi- cal method could provide a key to difficulties in life under all its aspects, mental and practical, inner and outer, private and public. But the most radical results in this sense would only be achieved by educating rising generations.

4 Global semiotics, modeling, and critique of anthropocentrism and glottocentrism

An important point of reference for semioethics is “global semiotics” (also “semiotics of life”) as it has been emerging since the 1960s with Thomas Sebeok above all, no doubt one of the greatest masters of the sign of the twentieth century (see Sebeok 2001; Petrilli and Ponzio 2001, 2002; Copley et al. 2011). We have described semioethics as a special orientation in semiotics. But which semiotics? A possible answer is *Sebeok’s global semiotics*. Semioethics has been conceived as a further development on Sebeok’s global semiotic vision of signs, life, and communication. There is no doubt that semioethics can best contribute to education from within a global semiotic framework. Global semiotics propends not only towards semioethics, as underlined here and elsewhere (see Petrilli 2007b, 2010), but also towards education in general. Nor did Sebeok fail to address the question of education, indeed the relation between semiotics and education directly himself (see Sebeok et al. 1988).

The project for global semiotics evidences the condition of interconnectedness among signs across the great semiotic web that is our biosphere – natural and cultural, human and nonhuman, verbal and nonverbal, intentional and unintentional, conscious and unconscious. As such, methodologically global semiotics calls for an interdisciplinary or, better, transdisciplinary perspective.

The semiotic approach recognizes and fosters interconnectedness, intertextuality, interference, imitation, derivation, contamination, dialogue among the different languages of the sign sciences (linguistics, sociolinguistics, psycholinguistics, psychoanalysis, logic, semiotics, philosophy of language), on the one hand, and of the physical-natural and other human sciences, on the other. Important examples are provided by the work of historical figures and trends across the twentieth century as represented, for example, by Charles Morris, the Vienna Circle, Ferdinand de Saussure, and Claude Lévi-Strauss. They all engage in transferring, respectively: the language of biology into semiotics and vice versa (today biosemiotics); the language of physics into neopositivism, or

“logical empiricism”; the language of economics (marginalism with the School of Lausanne) into linguistics; the paradigm of phonology into cultural anthropology, and so forth (see Petrilli [ed.] 2015).

Considering the manifold nature of semiosis, another characteristic of “global semiotics” is the critique of glottocentric and anthropocentric tendencies (Petrilli 2016: 45–52).

Glottocentrism characterizes those trends in semiotics that refer to linguistics for their general model of sign, hence to the verbal sign. But meaning-making processes know no boundaries whether of the typological order or the systemic, and certainly transcend the division between verbal and nonverbal signs. Meaning-making (or signifying) processes are dialogic and transsystemic and from this point of view are of the semiotic order (Petrilli 2010: 49–88).

Global semiotics offers the most effective instruments available today from the sign sciences for a critique of reductive approaches to studies on the role of signs as performed by the human being or “semiotic animal.” Human behavior is engendered in verbal and nonverbal signs, being distinct but inexorably interrelated aspects of the dynamical processes forming anthroposemiosis in the expanded sphere of biosemiosis. Moreover, verbal language cannot be separated from the larger context of nonverbal signs, thanks to which indeed it signifies and produces sense. We may further distinguish between nonverbal sign systems independent from verbal language (e. g., footprints in the sand) and nonverbal sign systems only partially dependent on the verbal (e. g., the fashion system), despite the claim that verbal language is predominant (on this account see Roland Barthes’s book, *Éléments de sémiologie*, 1964).

Moreover, we have claimed that global semiotics extends its gaze beyond human culture to life generally: from this perspective, “biosemiotics” provides the broader context for “anthroposemiotics” or “semiotics of culture” and is not separate from the latter. Rather, they are in a relation of mutual enhancement. Anthroposemiosis as a cultural process unfolds and develops at the intersection between nature and culture. Hence semiotics must avoid both biologism, which reduces human culture to communication systems traceable in other species, as well as anthropomorphic tendencies that reduce nonhuman animal communication to features specific to human communication. Such critique is rich in ethical implications for education. For example, in terms of the values regulating our relations with the other, both the critique of biologism and of anthropomorphism underline the need to avoid processes of homologation and elimination of diversity and with them the accompanying tendencies towards arrogance, dominion, and control over the other, instead of dialogue and participative interaction among differences that are not indifferent to each other (Ponzio 2002b, 2009).

Such critique underlines the need for developing the human capacity for listening and responsibility.

Moreover, anthropocentrism is usually always connected to some form of ethnocentrism. In fact, asserting man's superiority over other animals, nonhuman animals, has most often led to imposing "one's own superiority" of the ethnic-cultural order over the ethnic-cultural order of others, as though they were "subhuman."

Anthropocentrism and glottocentrism are two traditional limitations of which semiotics practiced as global semiotics is free. Contrary to the *pars pro toto* fallacy, the study of socio-cultural processes in human semiosis does not converge with general semiotics, but is one of its branches. To reduce semiotics to the socio-cultural aspect and again, even more restrictively, to an exclusive preference for the signs of intentional communication, as indicated by Ferdinand de Saussure's *sémiologie* (1916), or a certain interpretation thereof, is a mystification with respect to the manifold faces of the communication globe (Petrilli 2016).

According to Saussure, the general science of signs studies signs in society (1916: 33). But semiotics today has surpassed this conception by far: beyond "anthroposemiotics" and "endosemiotics," semiotics is also "microsemiotics," "mycosemiotics," "phytosemiotics," "zoosemiotics," "machine semiotics" and "environmental semiotics."

To overcome the glottocentric perspective as it has characterized the sign sciences across the twentieth century means to consider other sign systems beyond those specific to mankind. While these are not alien to the human world, they are not specific to it either. They concern the interconnection between human communication and the communicative behavior of nonhuman communities and environments.

Global semiotics applies the "detotalizing method" (Petrilli and Ponzio 2005: 154–166; Rossi-Landi, 1972, 1985, 1992). This method evidences the infinite plurality of the different worlds proliferating throughout the semiosphere, for our concerns here the anthroposociosemiosphere, which it describes in their condition of interconnectedness and interdependency, rather than of separation and self-sufficiency.

Sebeok uses the term "semiotics" and respective adjective "semiotic" not only for the discipline, or science, or as he prefers with John Locke "doctrine of signs," but also for "human semiosis" considered in its specificity. The human being is not only endowed with the capacity to use signs directly, but also to reflect upon signs. The distinction is conveyed by Charles Morris (1971: 434–455) with the expression "signs about signs," or better, "signs about signs about signs..." which explains Aristotle when he claimed that man is a "rational

animal.” “Semiotics” thus described is the capacity for “metasemiosis” (on the dual meaning of the term “semiotics” as the name of the general science of signs and as “metasemiosis,” see Petrilli and Ponzio 2005: 3–6). As the sole animal endowed with a capacity for metasemiosis (even though prefigurations are traceable among superior primates), thanks to its species-specific “modeling device” (see below), the human animal (a semiotic animal) is effectively the only animal capable of developing a global view of semiosis and of life. And this is what makes “semiotics” here now understood as the name of the general science of signs possible too.

So described in these terms semiotics manifests the capacity for metasemiosis, which, as anticipated, is the capacity not only to use signs directly like all other animals, but also to reflect on signs – including the signs forming one’s own identity, one’s own self – and eventually modify and improve them (see Petrilli 2013, 2014b). This capacity derives from the fact that with respect to other animals, the “primary modeling device” that is the basic human “modeling device” is something altogether special. The way each species communicates with the world and with others of the same or different species depends on the way it models and organizes its world. In the sphere of the nonhuman, there are as many different worlds relative to each nonhuman species as there are nonhuman species. And while the world of each nonhuman species is one only and always the same, this is not the case for humans. Human beings are capable of constructing a potentially infinite number of different worlds and worldviews.

This is what the biologist and “cryptosemiotician” Jakob von Uexküll called *Umwelt* (see Sebeok 1979: 3–26; von Uexküll 1992 [1934]). But while the *Umwelt* or world of all other species remains the same for the whole time that species exists, man is endowed with the possibility of creating multiple worlds, multiple *Umwelten*, thanks to his special modeling device. The explanation stands in the fact that the human primary modeling device includes a combinatorial capacity or “syntactics,” in the terminology of Charles Morris, that renders man capable of constructing, deconstructing and reconstructing his *Umwelt*, his world, consequently of creating many different possible worlds. To repeat then: the primary modeling device specific to mankind not only allows for the use of signs, but also for reflecting on signs, modifying them, and even improving them.

It is to Thomas Sebeok that we owe this explanation of human capacities, based on the concept of primary modeling. Moreover, for his theory of primary modeling Sebeok associates von Uexküll’s notion of *Umwelt* to the notion of model as formulated by the Moscow-Tartu school. The latter studied modeling in relation to different verbal systems, that is, in relation to different languages: every language models a given world and of course is prone to change

and development. On his part, Sebeok shifts the notion of modeling from language (*langue*) to a species-specific endowment present in all species. So even before becoming *homo loquens* man was already endowed with a modeling capacity, “primary modeling,” precisely, with the characteristics described above. When he reaches the evolutionary level of *homo sapiens* and speaks with the formation of verbal language, this occurs thanks to the appearance of a second modeling system, the modeling device of language (understood here as *langue* which, as just stated, representatives of the Moscow-Tartu school theorized as the only type of modeling available). To these two types of modeling a co-related third is added (which representatives of the Moscow-Tartu school described as the effect of verbal language), that is, modeling of the world relative to each culture, cultural modeling.

As a “semiotic animal” endowed with primary modeling, the human being is the only animal capable of a global perspective on semiosis. Such a capacity makes the human being responsible for life over the planet and even more so the practitioner of semiotics (here the name of the discipline), the semiotician, who sets himself the task of interpreting signs, therefore the signs of signs, and again the signs of signs of signs, and so forth, and consequently is in a position to develop a global vision of the world and its signs to a maximum degree. In fact, once semiotics has adopted a global perspective and we know that semiosis and life converge, that there are signs where there is life and where life will continue to flourish, the semiotician cannot but be responsible at the highest degree for life over the planet. Becoming aware of the human condition in such terms means to implement that special semiotic perspective denominated “semioethics.”

5 Global semiotics and education

To adopt a semiotic perspective on education is not to introduce semiotic studies to the philosophy of education and education studies generally, as though they were separate and unrelated disciplines. To introduce semiotics and its terminology to education studies and the school system is to reveal the role carried out by signs in human behavior, how they serve different ends and whether or not they are used appropriately. This means to say that semiotics can contribute to education in methodological terms, from its theoretical bases to the different practical aspects of teaching and learning. And in fact encounter between education and semiotics today under the banner of “edusemiotics” contributes to underlining how semiotics as the general science of signs is no less than foundational for studies in education. In relatively recent times, a significant

example of the focus on the connection between semiotics and teaching is Winfried Nöth's entry in *Handbook of Semiotics* (1990: 221–224).

But already in 1980, Augusto Ponzio had published the book *Scuola e plurilinguismo* (School and plurilingualism, in collaboration with Giuseppe Mininni [see Ponzio and Mininni 1980]), followed by a series of publications unknown to readers unfamiliar with Italian (see Ponzio 1983, 1988, 1995, 1997b, 2007), and again by the essays, this time in English “Sebeok's Semiotics and Education,” published in *Semiotica*, in 2002, and another of 2007 (co-authored with myself), “Criticism and Education” commissioned by Lisa Block de Behar for publication in the *Encyclopedia of Life Support Systems*, UNESCO (Petrilli and Ponzio 2007a). All this flows together and is further developed in his books, again in Italian, *Metodologia della formazione linguistica* (Methodology of linguistic education; 1997a), and *A mente. Processi cognitivi e formazione linguistica* (minding/Mindful. Cognitive processes and linguistic education; 2008).

With reference to the masters of the past, in his theses on “Semiotic and the School,” Charles Morris back in 1946 had claimed that semiotics can contribute significantly to education theory and practice, evidencing the role of signs in the development of human experience, knowledge and behavior: “At the level of higher education, a specific and detailed study of semiotic can serve to raise to fuller awareness the training in the adequate use of signs which should have occurred throughout the earlier levels” (Morris 1971: 326). This view is shared by Sebeok who was one of Morris's most renowned students, developing this approach in the context of his global semiotics not only as presented in the last book to appear before his death in 2001, *Global Semiotics* (Sebeok 2001), but also in the grand project inspiring the four volumes forming *Semiotik/Semiotics* (Posner et al. 1997–2004).

Sebeok established a connection between semiotics and education, in a relation where the former provides the overall orientation, design and general theoretical-methodological framework for the latter. He contributed to the development of teaching syllabi for semiotics in university programs (Sebeok 1976: 176–180; 1979: 272–279), therefore to the semiotic foundations of the theoretical and practical aspects of education (Sebeok et al. 1988). Sebeok too evidences the role played inevitably by signs at all stages in the educational process, the different ends they may serve, their adequacy or inadequacy in the processes of knowledge acquisition, signifying and understanding, in communication under all its aspects.

Sebeok's greatest contribution to education comes from his innovative ideas in semiotic studies (Petrilli and Ponzio 2001, 2002). His “global semiotics” is already a contribution in itself to education on a methodological level, from its theoretical foundations to the specialized pragmatic aspects of teaching and

learning, of imparting and acquiring knowledge. Moreover, this aspect of Sebeok's research is taken into consideration by Marcel Danesi in his 1998 book *The Body in the Sign* (now also available in Italian translation in an expanded edition by Danesi et al. 2004), where the expression "the body in the sign" purports to sum up what Sebeok has taught a whole generation of semioticians, to wit: life is defined by semiosis. Sebeok examines the manifestation patterns of semiosis in nature and culture evidencing the nexus between sign, body and culture, which are always in becoming in open-ended, ongoing processes of deferral from one sign to the next. On Peirce's account the world is perfused with signs, if it is not composed exclusively of signs. In dialogue with Lamb and Regan, Sebeok makes the following observations:

[Peirce said] that all this universe is perfused with signs. Then he added a thoughtful statement that it may indeed be composed exclusively of signs. The difficulty with that statement is that it is not verifiable. If you believe that the universe is perfused with signs, and if you believe, as Professor Lamb said, that we all have a mental model of the universe, an internalized mental model that admits into the mind nothing but signs, then, if there is any thing else left, it is not verifiable and therefore not knowable. This is known as the radical idealistic position. As a mild idealistic position, we would say that we sense that maybe there is something out there. For example, Heraclitus said there is something out there that he called the *logos*. But who knows? And I think that this radical idealistic position is in conformity with some versions of quantum mechanics. So on this point I am not sure whether we agree or disagree. If we disagree, it is up to him to prove that there is something out there that I cannot get at by means other than through signs. (Sebeok et al. 1988: 12)

What we do know is that the body flourishes, perceives, and acquires knowledge in unending interpretation/translation processes in and through signs, among signs (Petrilli 2012a, 2013). With reference to education Sebeok has the merit, firstly, of observing that teaching and learning processes come about in semiosis, as functions that develop together and complement each other. Furthermore, all learning processes are modeling processes that, on Danesi's account (1998: 61), can be described in terms of the natural learning flow principle that progresses from iconicity-dominated semiosis to symbolism-dominated semiosis. The claim is that initially children model knowledge and skills mainly iconically and then symbolically as they adapt human natural primary modeling to the forms of secondary and tertiary modeling characteristic of a given culture (see also Sebeok 1986, 1994, 1998; Ponzio 2002a).

As anticipated, the methodological framework put into place for the study of human modeling behavior is called "modeling systems theory." It is located at the interface between semiotics and biology – "biosemiotics" – as described by Sebeok in a book of 2000, *The Forms of Meanings*, co-authored with Marcel

Danesi. In light of modeling systems theory, semiosis – a capacity of all life-forms – is defined as “the capacity of a species to produce and comprehend the specific types of models it requires for processing and codifying perceptual input in its own way” (Danesi and Sebeok 2000: 5).

Developing the notion of modeling introduced by the Moscow-Tartu school (Fleischer in Posner et al. 1997–2004, Vol. 2, 1998: 2289–2290), we know that Sebeok identified three interconnected and complementary types of modeling, to wit: the species-specific primary modeling that characterizes the hominid; secondary modeling, which appears with *homo sapiens*; and tertiary modeling or cultural modeling, which depends directly on secondary linguistic modeling and indirectly on primary modeling. Jointly, these three types of modeling each contribute to the semiotic processes of human creativity and understanding. As such they should be the focus of education in relation to learning tasks. Indeed, from this point of view child development theories and practices as much as education studies generally would no doubt benefit from a revisit in light of modeling systems theory.

6 Dialogic plurilingualism and the central role of linguistic education

While the term “language” is polysemic, it is relevant to human semiosis alone. Semiotics posits that “language” (*langage*) and “languages” (*langues*) are exclusively human. Body languages are part of anthroposemiosis: the language of deaf-mutes, the sign language of Amerindians, the language of images, monastic signs, the language of proxemics, that is, signs of the spatial order relative to interpersonal relations – in fact the distance people maintain between each other is indicative of their relationships, and varies accordingly. On this basis, for example, we understand whether people walking down a footpath are connected or not (Hall 1963, 1966).

Moreover, the term “language” was elected by Sebeok to designate the *modeling device* specific to hominids, the capacity for so-called *primary modeling* as distinct from secondary and tertiary modeling, and at once their necessary condition of possibility. Further to our description above, the primary modeling system is the innate capacity for simulative modeling (Danesi and Sebeok 2000: 44–45). The secondary modeling system subtends both indicational and extensional modeling processes. The nonverbal form of indicational modeling is documented in various species, whereas extensional modeling is a uniquely

human capacity which presupposes the primary modeling system. Tertiary modeling undergirds highly abstract, symbol-based modeling systems, namely, human cultural systems (Danesi and Sebeok 2000: 120–129).

Sebeok also distinguishes “language” understood as modeling from “speech” (which is not only a communication device but also the secondary modeling device; Danesi and Sebeok 2000: 82–95). All species are endowed with a modeling device, but human modeling unlike all others is endowed with “syntax” (following Morris better denominated “syntactics”). Syntactics in primary modeling is what induces Sebeok to propose the term “language” as a synonym for modeling. Syntactics determines the human propensity for creativity, innovation, critique, and responsibility. The term “language” is also commonly used for *communication* (Sebeok’s “speech”), differentiated as “natural language,” or “historical-natural language” (*langue*) and “sectorial and special languages” (*langages*¹). The cardinal points in this brief scenario are twofold: “*language evolved as an adaptation; whereas speech developed out of language as a derivative exaptation over a succeeding period of approximately two million years*” (Sebeok 1998: 56).

The proliferation of natural languages and the concept of “linguistic creativity” (Chomsky 1966, 1976) testify to the capacity of language-as-modeling to produce an indeterminate number of possible worlds. Languages and creativity (linguistic and nonlinguistic) are associated with the human modeling capacity to invent multiple worlds; and ultimately with the propensity for the “play of musement.” This is an expression introduced by Peirce and adapted by Sebeok as the title of his 1984 monograph. It recalls what John Locke designated as “humane understanding” and Sebeok as “semiotics” (as distinct from the name of the science), or “metasemiosis”:

Semiotics is an exclusively human style of inquiry, consisting of the contemplation – whether informally or in formalised 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 labelled – 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 manoeuvrings. Locke

¹ As we know the French term *langage*, like the Italian *linguaggio*, has a double meaning at least indicating both “language-in-general” and “sectorial and special languages.” The French term *langue* and corresponding Italian *lingua* refer to “historical-natural language,” or simply “natural language.” The English “language” is used indistinctly to cover all three meanings similarly to the Russian *jazyk* and the German *Sprache*.

designated this quest as a search for “humane understanding”; Peirce, as “the play of musement.” (Sebeok 1998: 97)

Language-as-modeling, primary modeling, determines the capacity for the “play of musement,” consequently for the construction of a potentially infinite number of different worlds and relative natural languages which, in turn, enhance the creative capacity of language-as-modeling.

But language-as-modeling and the play of musement are also restricted by natural language. All the same, through the processes of translation, borders of one natural language are superseded in the direction of another language, or better in the relation with other languages. Learning more than one (natural) language is not only useful to overcome barriers of a communicative order. It also enhances capacities of the *cognitive, critical, ideological, cultural, inventive, and emotional orders*. To know languages, the condition of plurilingualism, whether external or internal to the same language, favors the human capacity for deconstruction and reconstruction which far from being limited to one’s mother-tongue or conditioned unilaterally by it, is thus amplified.

The gaze of another language enhances awareness of one’s own mother-tongue and at once the possibility of acquiring experience beyond the mother-tongue, experience that is not limited to it, or that does not converge with it. To know more than one language not only enriches the linguistic consciousness of the speaker, but also of the language itself. The lexicon of every language contains instruments and materials that enhance its metalinguistic capacity for critical self-reflection, making of itself an object for analysis and understanding. One language empowers the linguistic consciousness of another favoring the propensity for self-awareness, criticism and evaluation globally, according to the principle of *dialogic plurilingualism*. And all such developments are amplified in translation processes across languages internally to the same language as well as in international and interethnic terms.

The relation between learning a language and the speaker’s experience of the body also deserves attention. As revealed by infant lallation, to learn a mother-tongue means to lose many sounds and with them the capacity to produce those sounds which the child had initially possessed. To learn a foreign language means to recover the phonatory capacity, sounds debarred by the mother-tongue (at least partially, relatively to the acquired language). To articulate the phonemes of another natural language, the learner must reactivate physiological capacities that have atrophied because they were not foreseen or activated by the first language, though in a different linguistic community they could have been developed. To learn another natural language means to recover capacities long-abandoned, thereby renewing the relationship between word

and body. Such a perspective provides an important motivation for foreign language learning. To search for new experiences, new sensations, understanding, to experiment the body and enjoy the exotic are doubtlessly more attractive than the drudgery of training to the end of satisfying given ends of the functional order, in this case functional communicative ends. This is the motivation generally put forward to promote foreign language learning – the need to communicate. But such a motivation is often questionable as when used, for example, to justify programs for the introduction of foreign languages in early age school syllabi.

In Ferruccio Rossi-Landi's terminology (1968, 1975), "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, e. g., in family systems analyzed by Claude Lévi-Strauss (1958; Ponzio et al. 1999: 50–53).

Modeling works on what Luis Hjelmslev calls "purport" (1961 [1943]: 32–33), an amorphous *continuum*, on the acoustic and semantic level, expression and content. Purport in Hjelmslev's sense is similar to Hamlet's cloud (Shakespeare): it changes aspect from one moment to the next. Every natural language (Sebeok's "secondary modeling") shapes the indistinct material of purport, of expression and content in different ways, like sand put into different shapes or clouds taking different forms. Purport is physical, acoustic for what concerns the form of expression; it is also the amorphous "mass of thought" for what concerns the form of content. Thanks to linguistic work as deposited in different natural languages, the phonic material of the *continuum*-purport is articulated into "distinctive features," phonemes, in different natural languages (see Caputo 2010a, 2010b). So, as Hjelmslev claimed, the same material is restructured differently in different languages. All this can be explained in terms of creativity afforded by language understood in terms of the human species-specific primary modeling procedure.

"Linguistic education" would be well assigned a central role in education generally, from early primary school through to tertiary education and in programs for permanent education throughout the whole time of active life. And for an approach to problems of education today with claims to adequacy – whether a question of teaching or learning, both of which inevitably involve signs, language and communication –, encounter with the great masters of the sign such as Peirce, Welby, Bakhtin, Jakobson, Morris, and Sebeok himself is more than simply desirable (see Ponzio 2007; Sebeok 1979).

Like Sebeok, Chomsky (1957, 1965) evidences creativity as a specific characteristic of language, so that he too claims that the essential nature of language is not communicative. But the fundamental difference with respect to Sebeok is

that when Chomsky discusses “language” he intends “verbal language,” what Sebeok calls “speech.” Chomsky’s theory of verbal language does not account for the difference established by Sebeok between “language” and “verbal language” and without this distinction explanations of the origin and functioning of verbal language tend inevitably to be inadequate. And given that it describes language in terms of a single and unitary code (universal grammar), Chomsky’s linguistic theory does not account sufficiently for the multiplicity of languages, the condition of plurilingualism, whether external or internal to the same language. Yet the presence of many languages contradicts the Chomskyan hypothesis of innate universal grammar (see Ponzio 2012; Petrilli and Ponzio 2016). As observed above, Chomsky evidences the creative character of language, but his reference is to verbal language (and not primary modeling in Sebeok’s sense as described above). And whatever the specific natural language in question it remains anchored to the idea of a universal grammar. Such postulates not only stop Chomskyan linguistics from dealing adequately with the so-called “enigma of Babel,” but even from explaining fully the creative character of language itself. Chomsky analyzes language in terms of biological innatism and minimizes the importance of the effect of socio-cultural and historical forces on its development. Nor does he explain why universal biological structures do not produce one language only, nor why social influences prevail to produce the situation of internal plurilingualism.

Plurilingualism does not merely consist of the fact that there exists a multiplicity of different languages, whether internal or external to the same language (*langue*). The multiplicity of languages cannot be reconducted to a single and omnipresent univocal system that presumably replaces these languages or acts as a model in light of which to study and characterize them. Plurilingualism consists of the fact that every language (*langue*) and all languages, sectorial and special languages (*langages*), flourish in relations, whether direct or indirect, whether implicit or explicit, with other languages – that is, with other *langues* and other *langages* – which means to say they flourish in translation. The verbal signs of different languages refer to each other across languages, which means to say they refer to the interpretants of other languages, whether real, actualized, or possible. And it is in the encounter among different languages that meaning is dynamically constructed and deconstructed, somehow determined and developed, and is certainly always in becoming.

Mikhail Bakhtin (1963, 1981) is among those authors who has most contributed to understanding the vital importance of plurilingualism in the life of a language and in cultural systems generally. He developed a plurilingual and polylogic conception of language at a time when the political-cultural scene was dominated by a mechanistic, monolingual, indeed monological vision, as was

the Stalinist. Charles Peirce's conception of the infinite deferral of interpretants, infinite semiosis, also contributes to a better understanding of the vitality of language. To subsist as a sign the sign must refer to another sign that interprets it and develops its meaning in relations that are dynamical and open at the intralingual level as much as the interlingual and intersemiotic (Jakobson 1959).

In Italy the essential nature of plurilingualism, external and internal to a natural language, had already been evidenced by the great nineteenth century poet and writer Giacomo Leopardi (2013). A language lives on these two forms of plurilingualism, that is to say, it lives on interlingualism, internal and external. In his *Zibaldone* he too questioned those philosophical-linguistic trends that only recognize two poles in linguistic life around which all other linguistic phenomena are forcefully arranged, as Bakhtin says (see Bakhtin 1981). On Leopardi's account plurilingualism is given naturally. As such plurilingualism is actualized to lesser or greater degrees according to historical-cultural context and can be developed in terms of what with Bakhtin can be designated as "dialogic plurilingualism" from early stages in education. According to this vision multiple languages – whether in the same language, or cultural system, or person – not only coexist, but are able to communicate with each other, confront each other, interpret each other, dialogue with each other, translate each other and in any case somehow respond to each other. What may be designated as internal dialogic plurilingualism favors the capacity to gaze at a given language, a given culture and its values at a distance, with the eyes of another language even, of another culture and its values – the case of external plurilingualism. Dialogic plurilingualism, whether internal or external, favors the development of the metalinguistic and critical consciousness in translation processes that involve different sectorial and special languages inside the same natural language, as much as across different natural languages.

But monolingualism and univocality have often been indicated as the ideal to tend towards: one language, one meaning for each signifier, a verbal system that is fixed and free of internal languages, that consequently is free of semantic gaps among languages, of ambiguity. However, the "perfect language," that is, the possibility of total communication free of vagueness and ambiguity, the exact expression of reality and experience generally is a myth. And in fact another literary reference worth making here is to George Orwell, author of the novel *1984*, with his "Newspeak" metaphor and heavy satire of the perfect language ideal.

As paradoxical as it may seem, plurilingualism, polylogism, plurivocality, ambiguity, and vagueness are all inescapable and necessary conditions for successful communication, for expression and understanding, and by no means a punishment, a malediction, a fall from the original condition of grace

and happiness, as instead recounted by the bible story. Reading and interpreting such authors as Bakhtin, Peirce, Leopardi, Orwell, Dostoevsky, etc. brings us closer to understanding the enigma of Babel if ambiguity, semantic plasticity, polysemy, hermetism, simulation, pretense, allusion, reticence, implicit meaning, misunderstanding, otherness are considered as essential and not secondary aspects of verbal language, weak points or surface characteristics. Rather than express the *same* reality, verbal language tends always to take its distances – through other meanings and expressions – by speaking *another* reality.

Now to return to the question of modeling. It is in this concept that such phenomena as plurilingualism and linguistic creativity find an explanation, that is, in the species-specific primary modeling device (language as distinct from verbal language) attributed to human beings. This is so thanks to the capacity of language-as-modeling to produce multiple worlds and to use the same “material” (Hjelmslev 1961 [1943]) to create multiple linguistic universes, many worlds. If this is how things stand, the great multiplicity of different languages and different ways (phonological, syntactical, semantical and pragmatological) of expressing reality effectively depends on the propensity characteristic of language-as-modeling for plurilingualism and polylogism, for inventiveness, innovation and creativity.

7 Education for the future of semiosis and life

Semiotics developed in the direction of semioethics commits to evidencing symptoms of social unease with mankind’s responsibilities for the health of semiosis, therefore of life, in all its aspects. In an article of 1949, “Why Socialism?,” originally published in the inaugural issue of the journal *Monthly Review* and repropounded in 2009 to celebrate the journal’s sixtieth birthday, Albert Einstein claims that while science cannot create ends for human beings, it certainly does supply the means by which to attain given ends. The ends themselves are conceived by personalities with high ethical ideals carried forward by human beings who determine the slow evolution of society (albeit mostly unconsciously). The same principle can be applied to semiotics as the general science of science developed in the direction of semioethics.

Einstein underlines the problem of responsibility and the need for co-participation in the common quest for progress and wellbeing of humanity. However, when a question of values we must not overestimate science and scientific methods, nor assume that experts alone have a right to express themselves on questions affecting the organization of society. Responsibility is a prerogative of mankind and should be promoted through an educational

system that is oriented towards social goals. Rather than promote power, competition, and acquisitive success in preparation for a future career, education should encourage development of the unique individual's abilities together with a sense of responsibility for the other, one's neighbor as Peirce says in his 1893 paper, "Evolutionary Love," whether human or nonhuman, distant or less so (*CP* 6.287–6.317).

In "Why Socialism?" Einstein prefigures the development of present-day globalization when he describes humanity as already constituting "a planetary community of production and consumption": "the time – which looking back seems so idyllic – is gone forever when individuals or relatively small groups could be completely self-sufficient" (Einstein 2009 [1949]: 58). He denounces the evils caused by the economic anarchy of capitalist society, not least the crippling of individuals in a system where members of the community strive to deprive each other of the fruits of their collective labor, not by force but in compliance with the law. In fact, the entire productive capacity may legally be the private property of individuals. In a system where production is carried out for profit and not for use, private capital tends to become concentrated in the hands of few. Moreover, with the alliance between legislative bodies, political parties, and private capitalists who provide the necessary financial support, a truly democratic political system cannot be guaranteed, with the consequence that the interests of the exploited and underprivileged sections of the population are not sufficiently protected. Add to this the fact that the capitalist not only owns the means of production, but controls the main sources of information, from the press to the educational system.

Today, the ruling class is the class that controls communication, as amply demonstrated by Ferruccio Rossi-Landi as early as the 1960s and 1970s with his acute semiotic analyses of the relation between signs, ideology, and social planning (Rossi-Landi 1972, 1978). The globalized world enacts a social system that is based on profit, privilege, and power guaranteed by control over communication channels.

Einstein's article was published at a time of crisis and instability, violence and destruction in the aftermath of the World War II. In the face of offended humanity, global solitude and isolation, he interrogated social behavior and the possibility of a future. In the face of concern for the wellbeing of the single individual as much as of society at large (formed of individuals) – which translated into global semiotic terms resounds as concern for the health of semiosis, consequently for life as hinted above – we must inevitably ask the question, "Is there a way out?"

Einstein's answer focuses on the relational and social constitution of the human individual in terms that with reference to the sign sciences recall

reflections by Peirce, Welby, and Morris author of the *Open Self*, 1948, published just a year before Einstein's article (see Morris 1948). Each of these scholars evidences the dialogic interconnection between identity and otherness, self and other, the human being as a single individual and society, between singularity and sociality. According to Einstein man is at once a "solitary being" and a "social being." As a solitary being, he attempts to protect his own existence and that of those who are closest to him, to satisfy his personal desires, and to develop his innate abilities. As a social being, he seeks the recognition and affection of his fellow human beings, striving to share in their pleasures, to comfort them in their sorrows, and to improve their life conditions. These drives variously combine with each other and determine the extent to which an individual can achieve an inner equilibrium and can contribute to the wellbeing of society. Whether or not these drives are fixed in the main by inheritance, Einstein believes that the social environment plays a dominant role in shaping a human being's personality: "The individual is able to think, feel, strive, and work by himself; but he depends so much upon society – in his physical, intellectual, and emotion existence – that it is impossible to think of him, or to understand him, outside the framework of society."

Moreover, Einstein too points out that by contrast with nonhuman animals (in the article we are commenting he speaks of ants and bees), human behavior and relationships vary and are susceptible to change. "Memory, the capacity to make new combinations, the gift of oral communication have made possible developments among human beings which are not dictated by biological necessities" (Einstein 2009 [1949]: 57–58). Such developments are manifest in traditions, institutions, and organizations, in literature, in scientific and engineering accomplishments, in artworks. This explains how man can influence his life through his own conduct, and that in this process conscious thinking and wanting can play a part.

Einstein traces the essence of the crisis of his own day in the crisis of values involving the nature of the relationship of the individual to society and the dominant tendency towards egotism and isolation. In the capitalist system, the individual becomes more conscious of dependence on society, which perceived as a threat to one's natural rights or even to one's existence in terms of economy. But from the viewpoint of the properly human, considered in global semiotic terms, the single individual can only find the sense of life in sociality, in the otherness dimension, in the relation with the other. Even though in society egotistical drives are constantly accentuated, and social drives progressively deteriorate, Einstein admonishes that "Man can find meaning in life, short and perilous as it is, only through devoting himself to society" (2009 [1949]: 59).

Present-day semiotic inquiry evidences show the idea of the human individual as a separate and self-sufficient entity is a fallacy, and not only on a social

level. Nor is it simply a question of considering the connection between one individual and another in a given socio-cultural context. The body of an organism in the micro- and macrocosm, in nature and culture, 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 flourishes in the relation with other bodies and as such is intercorporeal and interdependent. The individual's relations transcend the individual sphere as much as the socio-cultural sphere. The global character of social relations involves sign situations which are not only international, intercultural, interethnic; rather, they also cut across abstract separations, such as the dichotomy natural versus historico-social life, and evidence how human life shares the same destiny as all of life generally over the planet.

8 Dialogism, otherness, listening

An approach to studies on signs and language that is at once global and detotalizing presupposes dialogue and otherness, therefore the capacity for listening to the other, opening to the other, hospitality. "Opening" is not only understood in the quantitative sense (with reference to the omnicomprehensive character of global semiotics), but also in the qualitative. Otherness obliges the totality to reorganize itself ever anew in a process related to "infinity," as Levinas (1961) teaches us, or to "infinite semiosis," as Peirce says. The relation to infinity is not only cognitive: beyond the established order, the symbolic order, convention and habit, the relation to infinity presupposes a relation to the other that is based on participative involvement and responsibility, on dialogic listening and participation. The relation to infinity is a relation to what is most refractory to the totality, a relation to the otherness of others, in other words, to the *absolute otherness* of others, including the other person. Nor is the expression "other person" necessarily to be understood in the sense of another self like myself, another *alter ego*, an I belonging to the *same community*. Instead, reference is to the other in its extraneousness, strangeness, difference – the alien self. Despite all efforts made by identity, despite all guarantees offered by identity, self cannot be indifferent in the face of difference thus described. Moreover, the nature of the relationship to the other is dialogic as studies in language and sign studies evidence so clearly today (Ponzio 2006a, 2006b).

Dialogism, otherness and listening are pivotal values for the health of semiosis and the interpersonal relationship and should be taken into account for an approach to education that is at once *global* and *detotalizing*. In light

of this approach the particular and the local are enhanced in their dynamic relation to the detotalized totality. And to promote a listening attitude in education, the propensity to listen to the other, therefore sensibility in terms of otherness and dialogism also means to educate in the interpretation of symptoms and responsibility towards the other (whether the other of self or the other from self).

Semioethics addresses the need to educate for sense, values and responsibility where responsibility is not understood as partial and relative responsibility, limited responsibility connected to a given role, function, credo or ideology, but rather as responsibility independent from all this, *total responsibility, therefore total responsiveness*. This type of responsibility is responsibility without alibis, without justifications or limits, inclusive of the juridical order, or relative to an affiliation, whether national, ethnic, etc., thematized by Bakhtin in his reflections on the “great time” of literature and its capacity for unlimited responsibility/responsiveness (Bakhtin, 1986: 170). This type of responsibility delivers the human being from all that obstacles the free manifestation of what characterizes humans in their specificity as humans, that is, “language-as-modeling.” Primary modeling allows for the proliferation and safeguard of languages and worldviews, possible and effective, for the construction of a polylogic and plurilingual world by contrast to the monologism of today’s global communication world.

On Bakhtin’s account dialogism converges with the condition of intercorporeity, it tells of the inevitability of interconnection with the other, of being involved with the other, whether we like it or not. This is passive involvement and not the result of an initiative taken by a subject. Dialogism is the impossibility of closing to the other, of indifference to the other. Even any attempts made at closing to the other, at expunging the other, at separating from the other are registered in the word itself, given that in this case too we must necessarily address the word of the other dialogically. The word is dialogical because it is passively involved in the word of the other. Dialogue is not only the composition of different viewpoints and identities. Most significantly Bakhtin describes dialogue as resistance to synthesis, including the synthesis – an illusion – of one’s own identity as an I (Bakhtin 1981; Petrilli 2012b; Ponzio 2013, 2015). In fact identity is a dialogically detotalized identity given that it is inevitably involved with the other. As Peirce also teaches us otherness is at the very heart of identity (Petrilli 2014b).

Relatedly to this special focus on otherness, dialogism and pluridiscursivity, plurilingualism, on recognition of the inevitability of co-participation and involvement based on listening between self and other, educational processes and linguistic education in particular should also focus on the need for educating to

responsibility understood in the terms outlined above. Elaborating on what we have just anticipated *à propos* the concept of responsibility, reading Bakhtin (1990) a clear distinction must be drawn between what he calls “moral responsibility,” on one side, and “formal responsibility” or “technical responsibility,” or responsibility limited to roles, on the other, where the former, “moral responsibility,” is far broader, inclusive and participative, and as such something altogether different from the latter, “formal, technical responsibility.” Responsibility in a full sense, understood as total involvement in the relation to oneself and to others is decided in the act, in the stance, in the response, in responsiveness relatively to a given context, a given spatial-temporal dimension that is unique to each one of us, that renders each one of us unreplaceable with respect to every other.

Responsibility thus described involves each one of us in our singularity and is connected to our unique place in the world. This is responsibility that cannot be delegated to the other, that cannot be replaced by another. All roles in society, with their “limited” or “special responsibility” do not abolish but simply specialize this unique decisional power that pertains to the single individual, singular and unreplaceable with his absolute responsibility, without limits, without guarantees or alibis.

In the social, responsibility is often separated from the condition of absolute responsibility, unlimited responsibility thereby losing sense to become formal, exterior, merely technical responsibility, limited responsibility. And once the act is emptied of the sense of absolute responsibility, it is no more than the performance of a technical role, a representation, imposture, as Bakhtin (1990) says, it is no longer a responsible act, but technical action.

Thus reduced the word, as technical action, is subject to the condition of “linguistic alienation,” to say it with Rossi-Landi (1992: 253–270). Bakhtin associates the crisis of values in the contemporary world to the fact that the act, including the act of the word, has been reduced to the status of technical action. To evoke Levinas (1974) once again, “saying” understood as encounter among words has been reduced to its product, the “said,” and thereby loses sense.

Imposture is the usurpation of power in the relation to the other, in whatever social role or function. Imposture is authority which becomes authoritarianism. In this case what remains is the formal, technical aspect of authority, where responsibility is reduced to technical responsibility and used as a justification, as an alibi (Petrilli 2016: 286–304). All this must be taken into account in the relation between semiotics, education and dialogic plurilinguism (Ponzio 2008).

We must reflect on the signs and values that orient human behavior in globalization (which is inextricably connected to high-level technological

development) and affect life over the planet, human and nonhuman. Semioethics responds to the need (ever more urgent today) to interrogate the sense of signs in the social world, the values they communicate and that effectively can only be formulated and transmitted through signs, whether intentionally or unintentionally, consciously or unconsciously (Morris 1964; Rossi-Landi 1992). And given the condition of interrelatedness among signs across the global semiobiosphere, this approach is of vital importance for life (semiosis) and its wellbeing over the entire globe.

For all these reasons a primary task for education today is to reflect critically in a pragmatic-ethical perspective on the relation between signs and values. Contrary to the tendency to reify signs, on one side this means to investigate the social processes of sign production, the production processes of verbal and nonverbal languages and related values, and on the other it implies the need for social planning and educational projects that focus on the interpretation of signs as symptoms of the world and the state of its health, including its discontents and diseases.

The sign and language sciences today need to recover those aspects of communication that are connected with the relation to the other and are no less than constitutive of communication itself, verbal and nonverbal, of language, of the word. In such a framework the sign and language sciences must recover those forms and practices of verbal language that most evidence dialogue, listening and hospitality towards the word (and therefore the world) of others.

Most interesting from this point of view are the resources of literary writing and of the practices of translation. Characterized, in fact, by a propensity for listening, whether through the expedients of allusion, metaphor, parody, irony, laughter, etc., literary writing and with it the practices of translation are perhaps the place where the rights of the other are best asserted in the face of the processes of homologation as imposed by the ideology of present-day dominant global communication. Educating to translational practice can be used to amplify such a propensity. Indeed, to recover the semioethic dimension of semiosis and semiotics today is ultimately to recover the human propensity for the art of listening, for dialogism and otherness in the effort to reconstitute the act in the relation to values and absolute responsibility, in a relation to the other that cannot be evaded.

References

- Bakhtin, Mikhail M. 1963. *Problemy poetiki Dostoevskogo*. Moscow: Sovetskij pisatel.
 Bakhtin, Mikhail M. 1981. *The dialogic imagination: Four essays*, C. Emerson (ed.), M. Holquist (ed. & trans.). Austin: University of Texas Press.

- Bakhtin, Mikhail M. 1986. *Speech genres and other late essays*. Austin: University of Texas Press.
- Bakhtin, Mikhail M. 1990. *Art and answerability: Early philosophical essays by M. M. Bakhtin*, M. Holquist & V. Liapunov (eds.), V. Liapunov & K. Bostrom (trans.). Austin: University of Texas Press.
- Barthes, Roland. 1964. Éléments de sémiologie. *Communications* 4. 91–135.
- Bonfantini, Massimo A. 1987. *La semiosi e l'abduzione*. Milan: Bompiani.
- Capra, Fitjof. 1995. *The web of life*. New York: Harper Collins.
- Caputo, Cosimo. 2010a. *Il fondo e la forma. La semiosi, la semiotica, l'umano*. Lecce: Pensa.
- Caputo, Cosimo. 2010b. *Hjelmslev e la semiotica*. Rome: Carocci.
- Chomsky, Noam. 1957. *Syntactic structures*. The Hague: Mouton.
- Chomsky, Noam. 1965. *Aspects of a theory of syntax*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1966. *Cartesian linguistics*. New York: Harper and Row.
- Chomsky, Noam. 1976. *Reflections on language*. London: Temple Smith.
- Cobley, Paul. 2010. Ecosemiotics. In P. Cobley (ed.), *The Routledge companion to semiotics*, 212. London: Routledge.
- Cobley, Paul, John Deely, Kalevi Kull & Susan Petrilli (eds.). 2011. *Semiotics continues to astonish: Thomas A. Sebeok and the doctrine of signs*. Berlin: De Gruyter Mouton.
- Danesi, Marcel. 1998. *The body in the sign: Thomas A. Sebeok and semiotics*. Ottawa: Legas.
- Danesi, Marcel, Augusto Ponzio & Susan Petrilli. 2004. *Semiotica globale*. Bari: Graphis.
- Danesi, Marcel & Thomas A. Sebeok. 2000. *The forms of meanings: Modelling systems theory and semiotics*. Berlin: Mouton de Gruyter.
- Deely, John, Susan Petrilli & Augusto Ponzio. 2005. *The semiotic animal*. Ottawa: Legas.
- Einstein, Albert. 2009 [1949]. Why socialism? *Monthly Review* 61(1). 55–61.
- Eliot, Thomas Stearn. 1982. *Old Possum's book of practical cats*. New York: Harcourt.
- Hall, Edward T. 1963. A system for the notation of proxemic behaviour. *American Anthropologist* 65(5). 1003–1026.
- Hall, Edward T. 1966. *The hidden dimension*. New York: Anchor.
- Hardwick, Charles S. (ed.). 1977. *Semiotic and signifiys: The correspondence between Charles S. Peirce and Victoria Lady Welby*. Bloomington: Indiana University Press.
- Hjelmslev, Luis. 1961 [1943]. *Prolegomena to a theory of language*. Madison: University of Wisconsin.
- Hoffmeyer, Jesper. 1996a. *Signs of meaning in the universe*. Bloomington: Indiana University Press.
- Hoffmeyer, Jesper. 1996b. Für eine semiotisch reformulierte Naturwissenschaft. *Zeitschrift für Semiotik* 18(1). 31–34.
- Jakobson, Roman. 1959. On linguistics aspects of translation. In Stephen Rudy (ed.), *Selected writings*, vol. 2 (of 8 vols. published between 1962–1987), 260–266. Berlin: De Gruyter Mouton.
- Kull, Kalevi. 1998a. On semiosis, *Umwelt*, and semiosphere. *Semiotica* 120(3/4). 69–80.
- Kull, Kalevi. 1998b. Semiotic ecology: Different natures in the semiosphere. *Sign Systems Studies* 26. 344–371.
- Leopardi, Giovanni. 2013. *Zibaldone*, Michael Caesar & Franco D'Intino (eds.), Kathleen Baldwin et al. (trans.). London: Penguin Classics.
- Levinas, Emmanuel. 1961. *Totalité et Infini*. The Hague: Nijhoff.
- Levinas, Emmanuel. 1974. *Autrement qu'être ou au-delà de l'essence*. The Hague: Nijhoff.
- Lévi-Strauss, Claude. 1958. *Anthropologie structurale*. Paris: Plon.

- Lotman, Jurij. 1990. *Universe of the mind: A semiotic theory of culture*, Ann Shukman (trans.). London: I. B. Tauris.
- Merrell, Floyd & João Queiroz (eds.) 2005. *On abduction: Between subjectivity and objectivity*. *Semiotica* 153(1/4). Special issue.
- Morris, Charles. 1948. *The open self*. New York: Prentice-Hall.
- Morris, Charles. 1964. *Signification and significance*. Cambridge: MIT Press.
- Morris, Charles. 1971. *Writings on the general theory of signs*. The Hague: Mouton.
- Nöth, Winfried. 1990. *Handbook of semiotics*. Bloomington: Indiana University Press.
- Nöth, Winfried. 1991. Ökosemiotik. *Zeitschrift für Semiotik* 18(1). 7–18.
- Nuessel, Frank, Vincent Colapietro & Susan Petrilli (eds.). (2013). *On and beyond signifi- cants: Centennial issue for Victoria Lady Welby (1837–1912)*. *Semiotica* 196(1/4). Special Issue.
- Ogden, Charles K. 1994. *C. K. Ogden and linguistics*, 5 vols., T. W. Gordon (ed.). London: Routledge-Thoemmes Press.
- Ogden, Charles K. & Ivor A. Richards. 1923. *The meaning of meaning: A study of the influence of language upon thought and of the science of symbolism*. London: Routledge and Kegan Paul.
- Orr, David W. 1992. *Ecological literacy: Education and the transition to a postmodern world*. Albany, NY: SUNY Press.
- Peirce, Charles S. 1931–1966. *The collected papers of Charles S. Peirce*, 8 vols., C. Hartshorne, P. Weiss & A. W. Burks (eds.). Cambridge: Harvard University Press. [Reference to Peirce's papers will be designated CP followed by volume and paragraph number.]
- Petrilli, Susan. 2005. The semiotic universe of abduction. Special issue, *Semiotica* 153(1/4). 23–51.
- Petrilli, Susan. 2009. *Signifying and understanding: Reading the works of Victoria Welby and the Signific movement*. Berlin: De Gruyter Mouton.
- Petrilli, Susan. 2010. *Sign crossroads in global perspective: Semioethics and responsibility*. New Brunswick: Transaction.
- Petrilli, Susan. 2012a. *Expression and interpretation in language*. New Brunswick: Transaction.
- Petrilli, Susan. 2012b. *Alrove e altrimenti. Filosofia del linguaggio, critica letteraria e teoria della traduzione in, con e a partire da Bachtin*. Milan: Mimesis.
- Petrilli, Susan. 2013. *The self as a sign, the world, and the other: Living semiotics*. New Brunswick: Transaction.
- Petrilli, Susan. 2014a. *Sign studies and semioethics: Communication, translation, values*. Berlin: De Gruyter Mouton.
- Petrilli, Susan. 2014b. Man, word, and the other. In Torkild Thellefsen & Bent Sorensen (eds.), *Charles Sanders Peirce in his own words: 100 years of semiotics*, 5–12. Berlin & New York: De Gruyter Mouton.
- Petrilli, Susan. 2015a. *Victoria Welby and the science of signs: Signifi- cants, semiotics, philosophy of language*. New Brunswick: Transaction.
- Petrilli, Susan. 2015b. Ethics and significance: Insights from Welby for meaningful education. In Michael Peters (ed.), *Encyclopedia of educational philosophy and theory*, 1–5. Singapore: Springer Science+Business Media.
- Petrilli, Susan. 2016. *The global world and its manifold faces: Otherness as the basis of communication*. Zurich: Peter Lang.
- Petrilli, Susan (ed.). 2014. *Semioetica e comunicazione globale*. Milan: Mimesis.
- Petrilli, Susan (ed.). 2015. *Scienze dei linguaggi e linguaggi delle scienze. Intertestualità, interferenze, mutazioni*. *Athanor* 25(18). Milan: Mimesis.

- Petrilli, Susan & Augusto Ponzio. 2001. *Thomas Sebeok and the signs of life*. Cambridge: Icon.
- Petrilli, Susan & Augusto Ponzio. 2002. *I segni e la vita*. Milan: Spirali.
- Petrilli, Susan & Augusto Ponzio. 2003. *Semioetica*. Rome: Meltemi.
- Petrilli, Susan & Augusto Ponzio. 2005. *Semiotics unbounded: Interpretive routes in the open network of signs*. Toronto: Toronto University Press.
- Petrilli, Susan & Augusto Ponzio. 2007a. Criticism and education. In *Encyclopedia of Life Support Systems*, UNESCO. <http://www.eolss.net/> (accessed 25 July 2016).
- Petrilli, Susan & Augusto Ponzio. 2007b. *Semiotics today*. Ottawa: Legas.
- Petrilli, Susan & Augusto Ponzio. 2010. Semioethics. In P. Cobley (ed.), *The Routledge companion to semiotics*, 150–162. London: Routledge.
- Petrilli, Susan & Augusto Ponzio. 2016. *Lineamenti di semiotica e di filosofia del linguaggio*. Perugia: Guerra.
- Ponzio, Augusto. 1983. Il bambino e la televisione: dal plurilinguismo alla pluridiscorsività, In Patrizia Mazzotta (ed.), *Televisione e scuola*, 5–15. Bari: Adriatica.
- Ponzio, Augusto. 1988. Per un'analisi contestuale-dinamica della letterarietà del testo letterario: *I promessi sposi* by Alessandro Manzoni. In Tatiana Slama-cazacu (ed.), *Analisi del testo letterario*, 271–283. Rome: Bulzoni.
- Ponzio, Augusto. 1995. Sviluppo linguistico e processi formative. Interview with Augusto Ponzio by Franca Pinto Minerva. *Scuola 7*. 4–5.
- Ponzio, Augusto. 1997a. *Metodologia della formazione linguistica*. Rome & Bari: Laterza.
- Ponzio, Augusto. 1997b. Comunicare l'università. *Laboratorio educativo meridionale per l'Europa 1997*. 5–13.
- Ponzio, Augusto. 2002a. Sebeok's semiotics and education. *Semiotica* 138(1/4). 299–311.
- Ponzio, Augusto. 2002b. *La differenza non indifferente. Comunicazione, migrazione, Guerra*. Milan: Mimesis.
- Ponzio, Augusto. 2006a. *The dialogic nature of sign*. Ottawa: Legas.
- Ponzio, Augusto. 2006b. The I questioned. *Subject Matters* 3(1). 1–42.
- Ponzio, Augusto. 2007. Metodica dell'ipertesto e traduzione letteraria. *Studi di Glottodidattica* 3. 37–56.
- Ponzio, Augusto. 2008. *A mente. Processi cognitivi e formazione linguistica*. Perugia: Guerra.
- Ponzio, Augusto (ed.). 2009. *La trappola mortale dell'identità/The mortal trap of identity. Athanor* 20(13). Special issue.
- Ponzio, Augusto. 2012. *Linguística chomskyana e ideologia social*. Univesidad Federal do Paraná, Curitiba Editora.
- Ponzio, Augusto. 2013. *Fuori luogo. L'esorbitante nella produzione dell'identico*. Milan: Mimesis.
- Ponzio, Augusto (ed.). 2014. Bachtin e il suo circolo. In *Opere 1919–1930*. Milan: Bompiani.
- Ponzio, Augusto. 2015. *Tra semiotica e letteratura. Introduzione a Michail Bachtin*. Milan: Bompiani.
- Ponzio, Augusto & Giuseppe Mininni. 1980. *Scuola e plurilinguismo*. Bari: Dedalo.
- Ponzio, Augusto, Patrizia Calefato & Susan Petrilli. 1999. *Fondamenti di filosofia del linguaggio*, 2nd edn. Bari: Laterza.
- Posner, Roland, Klaus Robering & Thomas A. Sebeok (eds.). 1997–2004. *Semiotik/semiotics: A handbook on the sign-theoretic foundations of nature and culture*, 4 vols. Berlin: Walter de Gruyter.
- Rossi-Landi, Ferruccio. 1968. *Il linguaggio come lavoro e come mercato*. Milan: Bompiani.
- Rossi-Landi, Ferruccio. 1972. *Semiotica e ideologia*. Milan: Bompiani.

- Rossi-Landi, Ferruccio. 1975. *Linguistics and economics*. The Hague: Mouton.
- Rossi-Landi, Ferruccio. 1978. *Ideologia*. Milan: ISEDI.
- Rossi-Landi, Ferruccio. 1985. *Metodica filosofica e scienza dei segni*. Milan: Bompiani.
- Rossi-Landi, Ferruccio. 1992. *Between signs and non-signs*, S. Petrilli (ed.). Amsterdam: John Benjamins.
- Saussure, Ferdinand de. 1916. *Cours de linguistique générale*. Paris: Payot.
- Schmitz, Walter H. (ed.). 1990. *Essays on signification: Papers presented on the occasion of the 150th anniversary of the birth of Victoria Lady Welby*. Amsterdam: John Benjamins.
- Sebeok, Thomas A. 1976. *Contributions to the doctrine of signs*. Lanham: University Press of America.
- Sebeok, Thomas A. 1979. *The sign and its masters*. Texas: The University of Texas Press.
- Sebeok, Thomas A. 1986. *I think I am a verb*. New York: Plenum Press.
- Sebeok, Thomas A. 1994. *Signs*. Toronto: Toronto University Press.
- Sebeok, Thomas A. 1998. *A sign is just a sign*. Bloomington: Indiana University Press.
- Sebeok, Thomas A. 2001. *Global semiotics*. Bloomington: Indiana University Press.
- Sebeok, Thomas A., Sydney M. Lamb & John O. Regan. 1988. *Semiotics and education*. Claremont, CA: Claremont Graduate School.
- Semetsky, Inna (ed.). 2010. *Semiotics education experience*. Rotterdam: Sense.
- Stables, Andrew & Inna Semetsky. 2015. *Edusemiotics: Semiotic philosophy as educational philosophy*. London: Routledge.
- Uexküll, Jakob von. 1992 [1934]. *A stroll through the worlds of animals and men: A picture book of invisible worlds*. *Semiotica* 89(4), 319–991.
- Vailati, Giovanni. 1971. *Epistolario 1889–1909*, G. Lanaro (ed.). Turin: Einaudi.
- Vailati, Giovanni. 1987. *Scritti*, 3 vols., M. Quaranta (ed.). Sala Bolognese: Arnaldo Forni.
- Vernadsky, Viktor I. 1926. *Biosfera*. Leningrad: Nauka.
- Welby, Victoria. 1983 [1903]. *What is meaning? Studies in the development of Significance*. Amsterdam: John Benjamins.
- Welby, Victoria. 1985 [1911]. *Signification and language: The articulate form of our expressive and interpretative resources*. In H. Walter Schmitz (ed.), *Signification and language*, 1–105. Amsterdam: John Benjamins.